

**VOLUME 3 GENERAL TECHNICAL ADMINISTRATION****CHAPTER 18 OPERATIONS SPECIFICATIONS****Section 3 Part A Operations Specifications—General**

**3-736 DISCUSSION.** This section and sections 4, 5, and 6 of Volume 3, Chapter 18 discuss each standard template available for issuance by the automated Operations Safety System (OPSS), also known as the Web-based automated Operations Safety System (WebOPSS). These templates are more commonly referred to as “paragraphs.” The standard paragraphs discussed in this order are limited to operations in accordance with Title 14 of the Code of Federal Regulations (14 CFR) parts 91, 91 subpart K (91K), 121, 125 (including Letter of Deviation Authority (LODA) 125 subpart M (125M)), 135, and 145.

**A. Definition of OpSpecs.** The standard paragraphs for parts 121, 125, 135, and 145 are called operations specifications (OpSpecs).

**B. Definition of MSpecs.** The standard paragraphs for part 91K are called management specifications (MSpecs).

**C. Definition of LOAs.** The standard paragraph for part 91 and 125M are called letters of authorization (LOA).

**D. Other Source Documents.** References are provided to other sections of this handbook, to advisory circulars, or other applicable documents that discuss detailed requirements for certain standard paragraphs.

**E. Ensure Complete Review.** Before issuing a standard paragraph, any specific requirements specified by this order or the referenced material (relative to the paragraph being issued) must be met. Before reading the following sections for the first time, review the applicable paragraphs available in the OPSS for the specific regulation.

**F. Applicability of Paragraphs.** There are some standard paragraphs that are required to be issued to all operators for a specific regulation. There are standard paragraphs that are optional and only issued when the operator is specifically authorized to conduct those operations.

**NOTE:** All 300-series and nonstandard 500-series OpSpecs/MSpecs/training specifications (TSpecs)/LOAs (Parts A, B, C, D, E, and H) require approval by the appropriate headquarters (HQ) policy division. Title 14 CFR parts 61, 91, 91K, 125 (including part 125 LODA holders), 133, 137, and 141 operators' nonstandard operational requests must be approved by the General Aviation and Commercial Division (AFS-800). Title 14 CFR parts 121, 135, and 142 nonstandard operational requests must be approved for issuance by the Air Transportation Division (AFS-200). Parts 121, 135, and 14 CFR part 145 repair stations and all airworthiness nonstandard requests must be approved by the Aircraft Maintenance Division (AFS-300). All Weather Operations (AWO) relating to instrument procedures must be approved by the Flight Technologies

and Procedures Division (AFS-400) and AFS-200 or AFS-800, as appropriate. Nonstandard authorizations for 14 CFR part 129 foreign operators require approval from the International Programs and Policy Division (AFS-50).

NOTE: All text added to an OpSpec/MSpec/TSpec or LOA through the use of nonstandard text entered in the nonstandard text block (sometimes referred to as “Text 99”) must also be approved by the appropriate HQ policy division. For detailed guidance on the process for obtaining HQ approval for nonstandard authorizations, principal inspectors (PI) must read the guidance contained in Volume 3, Chapter 18, Section 2.

### **3-737 PART A OPERATIONS AND MANAGEMENT SPECIFICATIONS PARAGRAPHS.**

#### **OPSPEC/MSPEC A001, ISSUANCE AND APPLICABILITY.**

**A. General.** A001 identifies the OpSpec/MSpec holder. The name must be the legal name of the operator. A001 also specifies the kinds of operations authorized, the applicable regulatory sections under which the operations are to be conducted, and any other business names under which the operations are being conducted. See the new OPSS user’s manual for additional guidance to issue A001. Figure 3-4 is a summary of the information required in - OpSpec/MSpec A001.

**Table 3-4. Summary of Information Required in OpSpec/MSpec A001**

| <b>Type of Certificate</b> | <b>Any of the following may apply:</b>                               | <b>Type of Carriage:</b>  | <b>Regulation Reference:</b>        | <b>Economic Authority Text to be inserted:</b>   |
|----------------------------|--|---------------------------|-------------------------------------|--|
| Air Carrier                | Domestic   | Common                    | 119.21(a)(1)<br><br>(Part 121)      | and provided, at all times, the certificate holder has written economic authority issued by the Department of Transportation.  |
| Air Carrier                | Flag   | Common                    | 119.21(a)(2)<br><br>(Part 121)      | and provided, at all times, the certificate holder has written economic authority issued by the Department of Transportation.  |
| Air Carrier                | Supplemental Passenger<br>(more than 60 pax and/or >18,000# payload) | Common                    | 119.21(a)(3)(i)<br><br>(Part 121)   | and provided, at all times, the certificate holder has written economic authority issued by the Department of Transportation.  |
| Air Carrier                | Supplemental All Cargo   | Common                    | 119.21(a)(3) (ii)<br><br>(Part 121) | and provided, at all times, the certificate holder has written economic authority issued by the Department of Transportation.  |
| Air Carrier                | Commuter<br><br>(5+ trips/week)                                      | Common                    | 119.21(a)(4)<br><br>(Part 135)      | and provided, at all times, the certificate holder has written economic authority issued by the Department of Transportation.  |
| Air Carrier                | On Demand<br><br>(less than 5 round trips/week)                      | Common                    | 119.21(a)(5)<br><br>(Part 135)      | and provided, at all times, the certificate holder has written economic authority issued by the Department of Transportation.  |
| Operating                  | Flight<br>(Part 125)   | Private<br><br>Non Common | 119.23(a)<br><br>(Part 125)         | and provided the certificate holder does not conduct any operation which results directly or indirectly from the certificate holder or any other person holding out to the public to provide for the carriage of person or property. |

|             |                                  |                                    |  |  |
|-------------|----------------------------------|------------------------------------|--|--|
| Operating   | On Demand<br><br>(non scheduled) | Private<br><br>_____<br>Non Common | 119.23(b)<br><br>(Part 135)<br>Ltd. to holding<br>out to public<br><br>_____<br># of Con tracts<br>(Definitions)<br>119.23(b)(3) | and provided the certificate holder does not conduct any operation which results directly or indirectly from the certificate holder or any other person holding out to the public to provide for the carriage of person or property. |
| Air Carrier | Commuter<br><br>Rotorcraft       | Common                             | 119.25(a)  | and provided, at all times, the certificate holder has written economic authority issued by the Department of Transportation.  |
| Air Carrier | On Demand<br><br>Rotorcraft      | Common                             | 119.25(b)  | and provided, at all times, the certificate holder has written economic authority issued by the Department of Transportation.  |
| None        | Fractional                       | Non Common                         | Part 91K   | None.  |

**B. Authorization.** A001 authorizes the conduct of operations under other business names known as “doing business as” (DBA). If no operations are authorized to be conducted under another DBA, the statement selected will state that “the operator is authorized to use only the business name which appears on the certificate to conduct the operations described in subparagraph a.” Other DBAs authorized under 14 CFR parts 215 or 298 must be listed in OpSpecs. Before listing a DBA in an operator’s OpSpecs or entering a DBA in an Air Oper Enhanced Vital Information Database (eVID) file, inspectors must verify that the DBA is on file with DOT or an appropriate state agency. This verification can be accomplished by one of the following means:

- 1) The operator shows that the DBA is listed on a DOT registration (proof of insurance);
- 2) The operator shows that the DBA is listed on a DOT certificate of public convenience and necessity;
- 3) The operator shows that the DBA is authorized by a DOT order or other DOT document;
- 4) When the operator claims the DBA is on file with the DOT, verification must be made by contacting the DOT Office of Aviation Analysis, Air Carrier Fitness Division, (202) 366-9721; or

5) When an “operating certificate” is involved, the operator shows that the DBA is authorized and registered by an appropriate state authority.

6) DBAs can apply to 14 CFR part 91 subpart K, but they do not have economic authority requirements.

**C. Part 145.** For part 145 repair stations, A001 lists the:

- Location,
- Mailing address (if different from the fixed location),
- Other DBAs (see subparagraph B above) if authorized, and
- Any delegated authorities.

**OPSPEC/MSPEC A002, DEFINITIONS AND ABBREVIATIONS.** A002 includes definitions of words or phrases used in other paragraphs. These definitions are not found in the regulations and should enhance understandings between the FAA and the aviation industry. Washington headquarters developed definitions must not be changed by regional or district offices. Washington headquarters will add definitions when it becomes apparent that they are needed. Addition of a definition by a certificate-holding district office (CHDO) makes the whole paragraph nonstandard and must be processed as a nonstandard OpSpec/MSpec request.

**OPSPEC/MSPEC A003, AIRPLANE/AIRCRAFT AUTHORIZATION.**

OpSpec/MSpec A003 authorizes an operator or certificate holder to use specific make, model, and series (M/M/S) of airplanes in 14 CFR part 91 subpart K (part 91K), 121, 125, or 135 operations. A003 is populated with data from the “Maintain Operator Data—Aircraft” area of the automated Operations Safety System (OPSS). The only field that is populated within the A003 template is nonstandard text. If this field is used, the additional text must be coordinated and approved in accordance with Volume 3, Chapter 18, Section 2, paragraphs 3-712 and 3-713. In most cases, the A003 column labels match the data column labels in the “Maintain Operator Data—Aircraft” area of the OPSS. In contrast to OpSpec A001, OpSpec A003 does not identify the air carrier’s overall authority to conduct a particular kind of operation. Instead, it represents the FAA’s approval of the air carrier’s use of a particular airplane in carrying out the kinds of operations that are authorized. The column labeled “Type Section 119” reflects the 14 CFR part 119 operating authorization granted by the certificate holder’s Air Carrier/Operating Certificate. Volume 2, Chapter 2, Section 2, paragraph 2-129 explains the hierarchy of part 119 authorizations. The rest of the set of OpSpecs are then put into place to authorize the air carrier to conduct specific types of operations in accordance with the authorizations and airplane identified in A001 and A003. The following provides terminology clarification and guidance on both the “A003” and the OPSS “Maintain Operator Data—Aircraft” columns. A003 templates do not use every data column available in the OPSS “Maintain Operator Data—Aircraft” area. A003 column usage will vary across 14 CFR parts. Each A003 has its columns organized to meet the needs of the 14 CFR part. The column descriptions below are not all-inclusive and, therefore, not every column in every A003 template is described. The columns that are not described are self-explanatory.

**A. M/M/S: Parts 91K, 121, 125, and 135.** Select the authorized M/M/S using the aircraft listing provided in the OPSS. If the appropriate M/M/S cannot be found in the OPSS, inspectors should immediately notify the OPSS help desk so that the airplane listing can be updated.

**B. Type of Part 119 Common Carriage Operations.** For each aircraft, list the type of operation authorized. This is accomplished in the OPSS “Maintain Operator Data—Aircraft” area. The authorization is aircraft specific. In some cases, more than one part 119 type of operation may be required for an M/M/S. When A003 is generated, the data from the OPSS “Maintain Operator Data—Aircraft” are loaded into the appropriate A003 columns. Part 119 section selections in the OPSS “Maintain Operator Data—Aircraft” area are part 119-specific for each 14 CFR part. Examples of part 119 section selections for parts 121, 125, and 135 include the following:

1) Selections available for part 121:

- Section 119.21(a)(1)—Domestic (D),
- Section 119.21(a)(2)—Flag (F),
- Section 119.21(a)(3)—Supplemental (S), and
- Section 119.21 (a)(1), (2), (3)—(D) (F) & (S).

NOTE: In the cases where more than one type of part 121 operation is authorized for a particular airplane, the certificate holder/principal operations inspector (POI) should select “119.21(a)(1), (2), (3)—(D) (F) & (S)” in the column labeled “Type Section 119.” For example, an air carrier who operates a DC-9-82, N12121, in both domestic and international operations (lower 48 states and Canada), the certificate holder/POI should select “119.21(a)(1),(2),(3)—(D) (F) & (S).”

2) Selections available for part 125/125M (Letter of Deviation Authority (LODA)):

- Section 119.23(a)—Private Carriage (Noncommon Carriage), and
- Section 119.23(a)—125M LODA (When Common Carriage is Not Involved).

3) Selections available for part 135:

- Section 119.21(a)(4)—Commuter,
- Section 119.21(a)(5)—On-Demand,
- Section 119.23(b)—Private Carriage (Noncommon Carriage),
- Section 119.25(a)—Rotorcraft Commuter, and
- Section 119.25(b)—Rotorcraft On-Demand.

**C. Passenger Seating Terminology for Parts 121 and 125.**

1) Passenger seating terminology is derived from and associated with the emergency evacuation demonstrations requirements of 14 CFR part 25, § 25.803; part 121, § 121.291(a)

and (b); and part 125, § 125.189. These terms are also consistent with the guidance in Volume 3, Chapter 30.

2) For the purposes of parts 121 and 125 emergency evacuation demonstration requirements, the terms “capacity” and “configuration” have the same meaning with respect to passenger seating. An airplane with a seating capacity of more than 44 passengers requires a demonstration of emergency evacuation procedures in accordance with § 121.291 or § 125.189.

3) “Certificated seats,” as referenced in A003, is a term derived from the emergency evacuation certification requirements of § 25.803. This requirement establishes, by actual demonstration, the maximum certificated seating capacity of the airplane. Volume 3, Chapter 30, Section 9 includes Table 3-121, Maximum Approved Passenger Seating Capacity For Transport, which lists the maximum seating capacity for airplanes typically used in air carrier service. This list is to be considered the primary source document for Flight Standards Service (AFS) inspectors when determining maximum seating capacities. The listed maximum seating capacity values are derived from the airplane Type Certificate Data Sheets (TCDS).

4) “Demonstrated seats” is the number of seats installed in the airplane at the time the certificate holder complied with § 121.291(a) or (b), or § 125.189(a) and (b). This seating configuration will determine the number of Flight Attendants (F/A) required by § 121.391 or § 125.269.

5) “Installed seats” refers to the actual seating configuration of the individual airplane.

NOTE: For part 135 OPSS data entry, “certificated seats” refers to the maximum seating capacity stated in the aircraft TCDS, which includes pilot seats. “Installed seats” are passenger seats actually installed in the individual aircraft. Office of the Secretary of Transportation (OST) Form 4507, Air Taxi Operator Registration and Amendments under Part 298 of the Regulations of the Department of Transportation, requires the applicant to list the passenger seats installed for the aircraft make and model. This does not include seats occupied by the pilot or co-pilot, unless the latter is available for passenger use. OPSS data feeds the 14 CFR part 298 insurance registration and coverage module from “Maintain Operator Data—Aircraft” for certificated seats only.

6) All-cargo operations allow only passengers as defined in § 121.583(a) and part 135, § 135.85. For all-cargo operations, the number “0” shall be entered into the columns labeled “Certificated Seats,” and “Demonstrated Seats.”

7) In passenger/cargo operations, the passenger seating guidance in subparagraphs 3-737C1) through 4) apply.

**D. Number of F/As: Parts 121 and 125.** Enter the number of F/As used during the certificate holder’s emergency evacuation demonstration required by § 121.291 or § 125.189 for each airplane listed.

**E. F/A: § 135.107.** In the OPSS “Maintain Operator Data—Aircraft, Flight Attendant” column enter the F/A requirement for each airplane. If the airplane is configured with more than 19 passenger seats, enter the number “1.” If the passenger seating configuration is 19 seats or fewer, enter the number “0.” There is not a “Number of Flight Attendants” column associated with OpSpec A003 for part 135.

**F. Class of Operation.** Enter the appropriate class of operation for each airplane listed. Enter only one class of operation for each airplane. The classes of operations are: Single-Engine Land (SEL), Single-Engine Sea (SES), Multiengine Land (MEL), Multiengine Sea (MES), and helicopter (HEL).

**G. Type of Operation.** Enter the appropriate en route flight rule for each airplane. If the airplane is approved for instrument flight rules (IFR) operations, enter “IFR/VFR” in the column labeled “En Route Flight Rule.” Part 121 operations are required to conduct operations in IFR. If the airplane is restricted to visual flight rules (VFR) operations only, select “VFR Only.” Select the day/night condition for each airplane. If the airplane is approved for both day and night conditions, select “Day/Night” in the column labeled “Condition.” If the airplane is approved for daylight conditions only, select “Day Only.”

#### **OPSPEC/MSPEC A004, SUMMARY OF SPECIAL AUTHORIZATIONS AND LIMITATIONS.**

**A. Purpose.** This paragraph summarizes optional authorizations applicable to a particular operator.

**B. Part 145.** For part 145 repair stations, this paragraph summarizes special (optional) authorizations and/or limitations applicable to the certificate holder. The OPSS application extracts the specific paragraphs that authorize a specific activity; it provides a summary of the authorized activity and reference number of the specific paragraph.

**OPSPEC/MSPEC A005, EXEMPTIONS AND DEVIATIONS.** In order for an operator to conduct operations under the provisions of any exemption or deviation, the exemption or deviation must be listed in A005.

**A. Exemptions.** The current exemption number and expiration date must be selected for insertion into A005. List the exemption numbers in numerical order. Enter a brief description of the exemption or, if appropriate, the exempted regulations in the space labeled Remarks and/or References (adjacent to each exemption). If certain conditions or limitations related to the exemption are specified in another paragraph of the OpSpec, the reference number of the other paragraph must also be entered in this space. For example, if a single high frequency (HF) radio is permitted by exemption in certain areas of en route operation, insert a reference to OpSpec B050 ( see paragraph B050). In this example, the appropriate areas of en route operation in B050 should contain a note authorizing the provisions of that exemption for those areas.

**B. Deviations.** Enter the applicable 14 CFR sections to which a deviation has been granted in A005b. Select the applicable deviations by 14 CFR section. In the space labeled Remarks and/or References (adjacent to each deviation), briefly describe the provisions of the

deviation. For example, if an operator is granted a deviation to permit the same person to serve as director of operations and director of maintenance, list the applicable 14 CFR. In the Remarks and/or Reference space, enter information specific to that operator or NA for “not applicable”. Table 3-5 explains the standard OpSpecs paragraphs that must be referenced and issued when granting deviations in each subject area (others may also be applicable).

NOTE: There are no deviations for part 145 repair stations.

**Table 3-5. Standard OpSpecs Paragraphs to Reference When Granting Deviations**

| <b>SUBJECT</b>   | <b>PARAGRAPH NUMBER</b> | <b>APPROPRIATE REGULATION</b>   |
|--|-------------------------|---|
| Management   | A006                    | Various, depends on operating regulation, management position, and qualifications |
| Extended-Overwater Operations without liferafts          | A013                    | Sections 121.339(a)(2), (3), and (4)  |
| Basic Part 135 Operator On-Demand Operations Only        | A038                    | Sections 119.69(b), 135.21(a), and 135.341(a)                                     |
| Basic Part 135 Operator Commuter and On-Demand           | A037                    | Sections 119.69(b), 135.21(a), and 135.341(a)                                     |
| Part 135 Single Pilot-in-Command Operator                | A039                    | Sections 119.69(b), 135.21(a), and 135.341(a)                                     |
| Extended-Range Operations with Two-Engine Airplanes      | B042                    | Sections 121.161(a)   |
| Special Fuel Reserves in International (Flag) Operations | B043                    | Sections 121.645(b)(2)  |

#### **OPSPEC A006, MANAGEMENT PERSONNEL.**

**A. Titles.** An operator’s management personnel may have titles different from titles of management positions used in the 14 CFR. The intent of A006 is to clearly identify the operator’s management personnel who are fulfilling 14 CFR management positions. A006 is also used to approve deviations from required management positions. Direction and guidance for approving deviations from management requirements is in subparagraph C below. Indicate approval of these deviations in A006 as follows:

- 1) For deviations that permit less than the required management positions, leave the positions that are not filled blank. Enter “NA” for “not applicable” for single-pilot operators and single pilot in command (PIC) operators.
- 2) For deviations that permit the same person to fill two or more positions, enter the name and title of that person in the appropriate positions.

3) For deviations that permit a person to hold a management position when that person does not meet the regulatory qualification requirements, enter the name and title of that person in the appropriate position.

4) In all cases list the appropriate regulatory section in OpSpec A005(b) of the OpSpecs.

**B. Required Information.** The OPSS must be accurate and contain at least the information required for OpSpecs in order for them to be correct. Additional text may be added to A006 without making it nonstandard, provided the extra paragraph is used to identify additional management positions (such as more than one chief pilot), or to specify conditions of a deviation. If the extra paragraph provides for anything other than the preceding, it must be processed in accordance with Volume 3, Chapter 2, Section 1, paragraph 3-37B.

**C. Required Management and Technical Personnel Positions.**

1) Title 14 CFR part 119, § 119.65 requires management and technical personnel positions for certificate holders operating under 14 CFR part 121 (i.e., Director of Safety (DOS), Director of Operations (DO), chief pilot, Director of Maintenance (DOM), chief inspector).

2) Section 119.69 requires management and technical personnel positions for certificate holders operating under 14 CFR part 135 (i.e., DO, chief pilot, DOM).

3) Sections 119.67 and 119.71 specify the airman and experience qualifications for personnel serving in these positions for parts 121 and 135, respectively.

4) Sections 119.67(e) and 119.71(f) specify airman, managerial, and supervisory experience deviation authority.

5) The regulations are intended to ensure that persons holding these required management and technical positions have the measure of experience as well as the demonstrated capability needed to effectively manage these types of programs. In addition, persons exercising control over the maintenance and operations programs must have that level of qualification and experience that will allow these persons to carry out their duties and responsibilities with the degree of expertise consistent with the certificate holder's responsibility to operate with the highest possible degree of safety.

6) The deviation request element of the regulations is intended to provide the certificate holder a measure of flexibility in order to allow employment of persons who may not possess the exact type or level of experience outlined in the regulations but who have other experience that is found to be comparable. Further, the deviation request procedure is not intended to accommodate individuals who do not possess the length of experience required by the regulations.

**D. Management Deviation Request.** When a certificate holder requests a management experience deviation, or management positions or numbers of positions other than the requirements of §§ 119.65 through 119.71, it must make such requests through its

certificate-holding district office (CHDO). The request must adhere to the following processes and procedures and contain a minimum of the information shown in subparagraph D1) below for evaluation:

**1) Management Deviation Request Contents.**

- a) Full certificate name including doing business as (DBA) of the requesting entity (e.g., ABC Airlines, Inc. DBA XYZ Air);
- b) Complete address and certificate number of certificate holder;
- c) Full name and airman certificate number of the management applicant;
- d) Number of aircraft by category, class, and type;
- e) Number of employees/pilots/other crewmembers;
- f) Areas and kinds of operations (e.g., Continental United States (CONUS), domestic) authorized;
- g) Statement of operations authorized (e.g., single PIC, basic part 135 on-demand only, part 121);
- h) Any other management deviations held by the certificate holder;
- i) Statement of why the certificate holder requires a management deviation, management position(s) involved, and what comparable experience the individual has that would justify the management deviation; and
- j) A resume for the individual that specifically outlines their work experiences and duration of each work experience to include, if appropriate, PIC, certified mechanic, and/or management experience for the kind of operations conducted.

NOTE: The information contained in the resume must be verified by the principal operations inspector (POI) or principal maintenance inspector (PMI), as appropriate.

**2) Evaluating Management Experience Deviation Requests (Part 119).**

- a) Lack of Airmen Certificates. The regulations do not permit the issuance of an airman certificate requirement deviation for individuals who do not hold the required airmen certificates or ratings. However, they may apply for an exemption under 14 CFR part 11.
- b) DOS Position. Each certificate holder that conducts operations under part 121 must have a DOS. This person is responsible for keeping the certificate holder's highest management officials fully informed about the safety status of the company. An independent, full-time position is required. However, in a small part 121 operation, the DOS functions may be

an additional function of a current manager. Any request for a management deviation involving a DOS position must be approved by the Air Transportation Division (AFS-200).

NOTE: Requests for one individual to fill this position for more than one certificate holder concurrently will not be considered.

c) **Comparable Experience.** A management position experience deviation may be issued for individuals who lack the precise experience requirements (specified in §§ 119.67 and/or 119.71) if acceptable comparable experience is presented and accepted by the Administrator.

1. **DO/Chief Pilot Positions.** Experience in any position where the normal duties and responsibilities included management/supervisory oversight and/or control of the development upkeep and the performance of one or more elements of an operator's operational control system may be considered as comparable experience. Management positions, wherein the applicant exercised management decisionmaking processes, may be considered as comparable experience (e.g., assistant DO, assistant chief pilot, general manager). Experience involving operational control may also be acceptable (e.g., supervisory aircraft dispatcher, supervisory flight follower).

2. **Comparable Experience.** For certificate holders with only a single PIC or a basic part 135 operation, the following examples may be considered as comparable experience:

- Experience as a PIC conducting the same kinds of operations that the applicant would be responsible for managing;
- Experience as a manager of a corporate flight department with operations similar to an air carrier;
- Experience in a military PIC position with responsibilities and experience comparable to a civil aircraft operation PIC; or
- Experience in a management position with responsibilities for safely transporting passengers and/or military executive charter.

3. **Unacceptable Experience.** All acceptable, comparable experiences added together must equal the required 3 years. However, experience as a military fighter pilot flying in combat scenarios, a flight instructor, a crop duster, or a helicopter external load operator, would not be considered comparable experience. A college education or educational experience in aviation or writing manuals does not substitute for actual work experience.

**Table 3-6. Example for a Chief Pilot Deviation**

| <b>POSITION/TITLE</b>    | <b>LENGTH OF EMPLOYMENT</b> | <b>COMPARABLE EXPERIENCE</b> |
|--------------------------|-----------------------------|------------------------------|
| Part 135 PIC             | 24 months                   | Acceptable (24 months)       |
| Assistant Chief Pilot    | 13 months                   | Acceptable (13 months)       |
| Flight/Ground Instructor | 26 months                   | Unacceptable (0 months)      |

|  |                  |
|--|------------------|
|  | Total: 37 months |
|--|------------------|

4. Months of Experience. In the example, the applicant would be approved. The applicant had 24 months of actual experience required by the regulation combined with 13 months of comparable experience for a total of 37 months (36 months required). The 26 months as a flight instructor is not comparable experience.

5. DOM Positions. Experience in any position where the normal duties and responsibilities included management oversight and/or control of the development, upkeep, as well as the performance of one or all of the following elements of an aircraft maintenance or inspection program, including:

- The maintenance program manual;
- Responsibility for airworthiness;
- Maintenance and inspection organization;
- Performance and approval of maintenance, preventive maintenance, and alterations;
- Alterations performed by maintenance providers or contractors;
- Continuing Analysis and Surveillance System (CASS);
- Maintenance recordkeeping; and
- Maintenance personnel training.

6. Chief Inspector Positions. Experience in any position where the normal duties and responsibilities included management oversight and/or control of the development, upkeep, as well as the performance of one or all of the following elements of an aircraft maintenance inspection, quality control (QC), or quality assurance (QA) functions within a maintenance or inspection program, including

- The inspection program policy and procedures;
- Responsibility for airworthiness;
- Inspection organization;
- QA of the performance and approval of maintenance, preventive maintenance, and alterations;
- Alterations performed by maintenance providers or contractors;
- Maintenance recordkeeping; and
- Inspection personnel training.

7. Combined Positions. Any certificate holder who requests approval to combine two or more required management positions into one position must ensure that the person who will serve in that position meets the qualifications for, or receives a deviation for, each management position to be combined (e.g., chief pilot and DO), in addition to receiving an approval to combine the management positions. The size, scope, complexity, and work load of the operations that the applicant has been involved with, and will be involved with in the combined management position, must be considered when evaluating this request. Requests to combine the positions of DOM and chief inspector will not be approved.

NOTE: Applicants who serve in a combined management position should not be assigned to any additional duties (e.g., check airman, aircraft instructor).

**3) Authority to Approve or Deny Management Requests.** Deviation authority in § 119.71(f) extends the accountability for granting or denying deviations from this section to the AFS-200 division manager and the Aircraft Maintenance Division (AFS-300) division manager.

a) A certificate holder may request a deviation through the assigned principal inspectors (PI). If the CHDO approves the deviation, the endorsement is then forwarded to the regional Flight Standards division (RFSD) for concurrence.

b) The request to employ a person who does not meet the appropriate airmen experience requirements, managerial experience requirements, or supervisory experience requirements of this section will be reviewed by the AFS-200 or AFS-300 division manager, as appropriate.

c) If the division manager finds, after consideration is given to the size and scope of the operation, that the person's qualifications and experience are comparable with the sought after position, a deviation may be granted under § 119.71(f). The Administrator may, at any time, terminate any grant of deviation authority issued under this paragraph.

d) AFS-200 and/or AFS-300, as appropriate, will return the package to the RFSD. AFS-200 and/or AFS-300 will reply in writing to the CHDO through the RFSD with a statement of approval or denial of the request. AFS-200 and/or AFS-300 will not take action on requests received directly from certificate holders or CHDOs without CHDO manager and RFSD manager recommendations.

**E. Program Tracking and Reporting Subsystem (PTRS) Input.** Enter activity code 1381 or 3381, as appropriate, and enter "119DEV" in the "National Use" field. POIs/PMIs should record comments of interaction with the operators in the "Comments" section.

### **OPSPEC/MSPEC A007, OTHER DESIGNATED PERSONS.**

**A. Template A007.** In the automated Operations Safety System (OPSS), Template A007 is used for identifying each operator's agent for service, persons designated to apply for and receive applicable authorizations, persons designated to receive Safety Alerts for Operators (SAFO) and/or Information for Operators (InFO), and other designated persons. Each Template A007 is labeled specific to the OPSS 14 CFR database:

1) Title 14 CFR parts 121, 125, 133, 135, and 145 databases: Template A007 is labeled an operations specification (OpSpec).

2) Title 14 CFR parts 141 and 142 databases: Template A007 is labeled a training specification (TSpec).

3) Title 14 CFR part 91 subpart K (part 91K) database: Template A007 is labeled a management specification (MSpec).

4) Part 91 subpart J and part 125 subpart M databases: Template A007 is labeled a letter of authorization (LOA).

5) Title 14 CFR part 137 and other databases also have A007 templates to identify designated persons.

**B. Agent for Service.** An agent for service is a person or company designated by the operator upon whom all legal notices, processes and orders, decisions, and requirements of the Department of Transportation (DOT), FAA, and National Transportation Safety Board (NTSB) shall be served. Once any of these documents has been served upon the operator's agent for service, the certificate holder cannot claim (legally) that it did not receive the documents. Title 49 of the United States Code (49 U.S.C) § 46103 requires air carriers to designate an agent for service. The name, title, and address of the agent for service must be obtained from the operator and correctly entered into the OPSS Certificate Holder's Personnel tab. This information will load into the A007 template.

**C. Persons Designated to Apply for and Receive OpSpecs/TSpecs/MSpecs/LOAs.** Names and titles of persons designated by the operator as authorized to apply for and receive OpSpecs/TSpecs/MSpecs/LOAs must be entered in Template A007. The "Parts" of the operator's authorizations for which the designated person is responsible must also be entered. Principal inspectors (PI) may determine that it is appropriate to have signatures of these designated persons recorded in this subparagraph.

**D. Persons Designated to Receive SAFOs and/or InFOs.** All A007 templates (with the exception of part 141 and 142 databases in the OPSS) are used to collect the name, email address, telephone number, and type of SAFO/InFO information that person should be sent (i.e., Operations, Airworthiness, or both). Part 141 pilot schools and part 142 training centers will not have a person designated to receive SAFOs or InFOs in Template A007. Part 145 repair stations will have a person designated to receive InFOs in Template A007. A reply message signifying receipt of the SAFO/InFO information by a designated person is not required. (Refer to the current editions of FAA Orders 8000.87, Safety Alerts for Operators, and 8000.91, Information for Operators (INFO).)

NOTE: If an operator does not have an email address, a facsimile number may be entered in the email address block.

1) A SAFO contains important safety information, often of an urgent nature, and may include recommended action. SAFO content is valuable to air carriers and other air operators in meeting their statutory duty to provide service with the highest possible degree of safety in the public interest.

2) Much like a SAFO, which contains critical safety information, an InFO contains valuable information for operators that should help them meet administrative requirements or certain regulatory requirements with relatively low urgency or impact on safety.

3) Government and industry have agreed on the importance of having a prompt, reliable delivery system for SAFOs and InFOs and taking advantage of email and postings at

FAA public Web sites. Accordingly, they have ratified that a recipient of SAFOs and InFOs must be identified in Template A007 so that the FAA may notify an operator of a new SAFO or InFO and recommended action to be taken by the respective operators identified in each SAFO/InFO.

**E. Part 91K.** Part 91K fractional ownership operations must identify the specific persons in MSpec A007 as follows:

- 1) Agent for service for the program manager.
- 2) Personnel designated to apply for and receive management specifications for the program manager.
- 3) Point(s) of contact (POC) and required positions for those authorized a Continuous Airworthiness Maintenance Program (CAMP).
- 4) Voluntary Disclosure Program Personnel for part 91K only. Reference Advisory Circular (AC) 00-58, Voluntary Disclosure Reporting Program, current edition, and Volume 11, Chapter 1, Section 1.
- 5) Personnel designated to receive SAFOs/InFOs for the program manager.

**F. Part 145 Repair Stations.** List the authorized person(s) by name, title, and the paragraph of the OpSpec he/she is authorized to sign.

NOTE: Individuals' titles listed in Template A007 should match the title in the Enhanced Vital Information Database (eVID).

#### **OPSPEC A008, OPERATIONAL CONTROL; MSPEC A008, FLIGHT MANAGEMENT.**

**A. General.** Each 14 CFR part 121 and part 135 operator must have a system and/or procedures for the control of flight movements. The intent of A008 is to promote a mutual understanding between an operator and the FAA concerning the system and/or procedures used by that operator. Volume 3, Chapter 25, Operational Control for Air Carriers details the three basic systems and/or procedures required by parts 121 and 135. The three systems and/or procedures are as follows:

- 1) Part 121 domestic and flag operations must have dispatch systems. See Volume 3, Chapter 25, Section 2, Flight Dispatch Systems and Domestic Operating Rules.
- 2) Part 121 supplemental operations must have flight following systems when the operator does not have an established dispatch system. See Volume 3, Chapter 25, Section 3, Part 121 Flight Release Systems and Supplemental Operating Rules.
- 3) Part 135 operators use flight locating procedures. See Volume 3, Chapter 25, Section 5, Title 14 CFR Part 135 Flight Locating Systems and Operating Rules.

4) MSpec A008 must describe the flight management used by the program manager to provide program control for flight operations and other procedures and policy instructions regarding program operations. This information may also be notated by reference to the appropriate manual (part 91, § 91.1029). In addition, MSpec A008 requires the program manager to give the location of the current list of fractional aircraft owners (part 91, § 91.1027).

**B. Referencing With Paragraph A008.** Describe or reference the system and/or procedures used by an operator in A008. It is preferable to complete A008 with references to an operator's manual or sections of an operator's manual which describe the system and/or procedures used by that operator. It is not necessary to control these references by date. Change the references only when a revision to the operator's manual makes the reference in the OpSpecs incorrect. When an operator's manual does not adequately describe the system and/or procedures used, a narrative description combined with references may be necessary. Often, it may not be appropriate to use references in this paragraph, (especially with smaller part 135 operators). In these cases narrative description may be necessary. When a narrative description is used, it should be brief but provide sufficient information so that the FAA and the operator have the same understanding about the system and/or procedures used by the operator.

**C. Necessary Information for Description of Systems/Procedures.** The description of the systems and/or procedures for controlling flight movement as described in the operator's manual and referenced in the OpSpecs, or as narratively described in the OpSpecs, should include the following information, as appropriate, to the kind of operation:

- Methods and procedures for initiating, diverting, and terminating flights;
- Persons or duty positions authorized to, and responsible for, exercise of operational control;
- Facilities and location of facilities used by the operator in the exercise of operational control;
- Communication systems and procedures used by the operator;
- Special coordination methods and/or procedures used by the operator to assure the aircraft is airworthy; and
- Emergency notification procedures.

#### **OPSPEC A009, AIRPORT AERONAUTICAL DATA; MSPEC A009, AERONAUTICAL DATA.**

**A. General.** Part 121, §§ 121.97 and 121.117 require part 121 operators to have an approved system for obtaining, maintaining, and distributing airport aeronautical data. A009 provides the method for approving airport aeronautical data systems for part 121 operators. Title 14 CFR part 91, § 91.103 and 14 CFR part 135 subpart I, § 135.83 require part 135 operators to obtain, maintain, and distribute essentially the same types of airport aeronautical data. Although a part 135 operator is not required to obtain FAA approval of the system used, A009 provides a method of promoting the same understanding between the operator and FAA concerning the system used to comply with the regulations pertinent to airport aeronautical data. Volume 4, Chapter 3, Section 4, Airport Data Acquisition Systems provides direction and guidance concerning airport aeronautical data systems.

**B. Referencing Systems Used for A009.** Describe or reference the system approved for part 121 operators or used by part 135 operators in A009. When possible, the paragraph should be completed by referencing pertinent sections of the operator's manual or other documents which describe the system used by the operator. When the airport aeronautical data system is not described in a manual or another document, a narrative description of the system must be used to complete A009. When a narrative description (or outline) is used, it should be brief but provide sufficient information to describe the system used to obtain, maintain, and distribute required airport aeronautical data.

**C. Description of Aeronautical Data System.** The program manager's description of the aeronautical data system in MSpec A009 should be brief but provide sufficient information describing the system used to obtain, maintain, and distribute required aeronautical data.

### **OPSPEC/MSPEC A010, AVIATION WEATHER INFORMATION.**

**A. General.** Title 14 CFR contains general regulatory requirements for certificate holders and program managers who conduct operations in accordance with 14 CFR parts 91 subpart K (part 91K), 121, and 135 to use specific sources for obtaining weather reports and forecasts for the purpose of controlling flight movements (operations). OpSpec/MSpec A010 is the method whereby the Administrator approves a certificate holder or program manager to use a particular source of aviation weather reports and forecasts, including those involving adverse weather phenomena.

**B. Additional Guidance.** Guidance regarding the specific regulatory requirements for aviation weather for parts 91K, 121, 125, and 135 can be found in Volume 3, Chapter 26, Sections 1 thru 4. Principal operations inspectors (POI) with oversight responsibility of these program managers and certificate or Letter of Deviation Authority (LODA) holders must review this additional guidance prior to issuing or amending OpSpec/MSpec/LOA A010.

**C. Title 14 CFR Parts 91K and 135.** Sections 91.1039 and 135.213 (as applicable) require program managers conducting part 91K operations and certificate holders conducting part 135 operations to use sources such as the National Weather Service (NWS) for weather facilities or for weather reports and forecasts. These regulations also allow program managers and certificate holders to use weather sources approved by the Administrator.

1) A010 Subparagraph a. Subparagraph a of A010 automatically lists the NWS and sources approved by the NWS. POIs may instruct certificate holders and program managers to include a breakdown of each NWS approved source in the certificate holder's/program Operations Manual in accordance with the requirements of §§ 91.1025(n), 91.1025(o), and 135.23(r), as applicable.

2) A010 Subparagraph b. Subparagraph b of A010 contains a list from which the POI may select each weather source approved by the Administrator. Weather sources approved by the Administrator are outlined in Volume 3, Chapter 26, Section 2, Regulatory Sources of Aviation Weather Information and Aviation Weather Information Systems—Parts 91K, 121, and 135. To select a weather source, place a check mark in the appropriate box. Only the selected weather sources will display when the template is issued. If a certificate holder or program

manager desires to use a weather source (e.g., a Commercial Weather Information Provider (CWIP)) that is not available for selection in the A010 template, POIs must review Volume 3, Chapter 26 Section 2, paragraphs 3-2075 and 3-2076 to determine whether the certificate holder is required to have an Enhanced Weather Information System (EWINS) or approval from the Air Transportation Division, (AFS-200) in lieu of an EWINS. Any text entered into the nonstandard/optional text (Text 99) box, requires prior approval from AFS-200. (See Volume 3, Chapter 18, Section 2, paragraphs 3-712 and 3-713).

#### **D. Part 121.**

**1) Part 121 Domestic and Flag Operations.** Section 121.101 requires certificate holders conducting part 121 domestic and flag operations to use certain weather sources depending on where a flight is operating (i.e., outside or inside of the United States). OpSpec A010 lists the part 121 domestic and flag regulatory requirements and contains a text box and tables where POIs will enter information regarding the weather sources that are approved by the Administrator. Any text entered into the nonstandard/optional text (Text 99) box requires prior approval from AFS-200 (See Volume 3, Chapter 18, Section 2, paragraphs 3-712 and 3-713).

a) A010 Subparagraph b(1). Subparagraph b(1) of OpSpec A010 automatically lists the NWS or a source approved by the NWS as the source for weather reports within the 48 contiguous United States and the District of Columbia. POIs may instruct certificate holders to include a breakdown of each NWS approved source in the certificate holder's operations manual in accordance with the requirements of § 121.135(a)(4).

b) A010 Subparagraph b(2). Subparagraph b(2) of A010 contains a list from which the POI may select each weather source approved by the Administrator. Weather sources approved by the Administrator are outlined in Volume 3, Chapter 26, Section 2. To select a weather source, place a check mark in the appropriate box. Only the selected weather sources will display when the template is issued. If a certificate holder desires to use a weather source (e.g., a CWIP) that is not available for selection in the A010 template, POIs must review Volume 3, Chapter 26 Section 2, paragraphs 3-2075 and 3-2076 to determine whether the certificate holder is required to have an EWINS or approval from AFS-200 in lieu of an EWINS. Any text entered into the nonstandard/optional text (Text 99) box, requires prior approval from AFS-200. (See Volume 3, Chapter 18, Section 2, paragraphs 3-712 and 3-713).

c) A010 Subparagraph b(3), Table 1, Adverse Weather Phenomena Reporting and Forecast System. In accordance with § 121.101(d), certificate holders conducting part 121 domestic and flag operations are required to have an FAA-approved system of obtaining reports and forecast of adverse weather phenomena. POIs will list each weather source (provider) the certificate holder is approved to use in its adverse weather phenomena reporting and forecast system in the first column of Table 1 in OpSpec A010. POIs will enter the name of the certificate holder's manual containing the approved adverse weather phenomena reporting and forecast system along with the date of initial approval and the date of the latest revision (when issued) into the remaining columns of Table 1. More detailed information on adverse weather phenomena reporting and forecast systems is located in Volume 3, Chapter 26, Section 3. POIs must review this information prior to approving an adverse weather phenomena reporting and forecast system. If a certificate holder is authorized to use an EWINS as a means of satisfying the

regulatory requirement to have an FAA-approved adverse weather phenomena reporting and forecast system, POIs may select “See Table 2” in the first column provided in A010 Table 1. There is also a help icon (🔗) for this table in WebOPSS.

d) A010 Subparagraph b(4). Subparagraph b(4) of OpSpec A010 simply reflects the regulatory requirement of § 121.101(c) for certificate holders to use weather forecasts that are prepared from the weather reports prescribed in subparagraphs b(1), b(2), and b(3) of A010.

**2) Part 121 Supplemental Operations.** Section 121.119 requires certificate holders conducting supplemental operations to use certain sources of weather information depending on where a flight is operating. A010 lists the part 121 supplemental regulatory requirements and contains a text box and a table where POIs will enter information regarding the weather sources that are approved by the Administrator. Any text entered into the nonstandard/optional text (Text 99) box requires prior approval from AFS-200 (See Volume 3, Chapter 18, Section 2, paragraphs 3-712 and 3-713).

a) A010 Subparagraph c(1). Subparagraph c(1) of OpSpec A010 automatically lists the U.S. NWS or a source approved by the Weather Bureau (The Weather Bureau is represented by the NWS) as the source for weather reports within the United States. POIs may instruct certificate holders to include a breakdown of each NWS approved source in the certificate holder’s operations manual in accordance with the requirements of § 121.135(a)(4).

b) A010 Subparagraph c(2). Subparagraph c(2) of OpSpec A010 contains a list from which the POI may select each weather source approved by the Administrator. Weather sources approved by the Administrator are outlined in Volume 3, Chapter 26, Section 2. To select a weather source, place a check mark in the appropriate box. Only the selected weather sources will display when the template is issued. If a certificate holder desires to use a weather source (e.g., a CWIP) that is not available for selection in the A010 template, POIs must review Volume 3, Chapter 26 Section 2, paragraphs 3-2075 and 3-2076 to determine whether the certificate holder is required to have an EWINS or approval from AFS-200 in lieu of an EWINS. Any text entered into the nonstandard/optional text (Text 99) box, requires prior approval from AFS-200. (See Volume 3, Chapter 18, Section 2, paragraphs 3-712 and 3-713).

c) A010 Subparagraph c(3). Subparagraph c(3) of OpSpec A010 simply reflects the regulatory requirement of § 121.119(b) for certificate holders to use weather forecasts that are prepared from the weather reports prescribed in subparagraphs c(1) or c(2) of A010.

**E. Approval to Use an EWINS—Parts 91K, 121, and 135.** When a part 91K program manager or part 121 or 135 certificate holder is approved to use an EWINS, POIs will list each approved weather source used by the certificate holder/program manager as part of its EWINS in the first column of the EWINS table (Table 1 for parts 91K and 135; Table 2 for part 121) contained in OpSpec/MSpec A010. POIs will enter the name of the manual containing the EWINS, the date of initial approval of the EWINS, and the date of the latest revision of the EWINS (when issued) in the remaining columns of the EWINS table. If EWINS is not authorized, POIs will enter “N/A” in the first column of the EWINS table. There is also a help icon (🔗) for this table in WebOPSS. More detailed information on EWINS is located in

Volume 3, Chapter 26, Section 4. POIs must review this guidance prior to approving an EWINS or EWINS source (provider).

**F. Part 125.** Part 125 does not contain any requirements for specific sources for aviation weather information. If a certificate or LODA holder, or the POI wishes to exercise the option of listing sources of aviation weather information in OpSpec/LOA A010, the POI may list each weather source in the text box provided in the template. Otherwise, the POI may simply list “N/A” in the text box provided. Additional guidance regarding the weather requirements of part 125 can be found in Volume 3, Chapter 26. The OpSpec/LOA A010 templates for part 125 operations do not contain an EWINS table.

### **OPSPEC/MSPEC A011, APPROVED CARRY-ON BAGGAGE PROGRAM.**

**A. General.** Part 121, § 121.589 requires part 121 operators to have an approved carry-on baggage program. This regulation also requires FAA approval to be in the operator’s OpSpecs. When the FAA issues OpSpec/MSpec A011, the operator is authorized to either allow passengers to stow carry on bags in the aircraft cabin or restrict the items brought inside the aircraft cabin to passenger personal items. Operators that do not allow carry-on bags in the cabin of the aircraft are considered to have a no-carry-on baggage program. Advisory Circular (AC) 120-27, Aircraft Weight and Balance Control, current edition, provides further details regarding the definitions of carry-on baggage and personal items. OpSpec/MSpec A011 must describe or reference the carry-on baggage program or the no-carry-on baggage program. It is permissible for OpSpec/MSpec A011 to reference a separate carry-on baggage document developed by the operator that describes the program. However, the operator may elect to implement the carry-on baggage program by describing the requirements of the program in various sections of its manuals, such as the passenger services manual and the flight attendant manual. In this case, template A011 should reference specific sections of the pertinent manuals. Reference to the approved program in the template must be controlled by revision number and/or date, as appropriate. When an operator’s manual or separate carry-on baggage document does not adequately describe the approved carry-on baggage program, a combination of references and narrative description may be necessary. The description of the approved carry-on baggage program must address the items discussed in the current editions of AC 121-29, Carry-On Baggage, and AC 120-27. Additionally, one or more of templates A096, A097, A098, and/or A099 must be issued to track the approved carry on bag/personal item actual or average weights.

**B. Accounting for Carry-On Baggage Weight.** Parts 91, 91 subpart K, and 135 operators requesting authorization to use average or segmented passenger weights that meet the requirements specified in AC 120-27, current edition, must either have a letter of authorization or been issued OpSpec/MSpec A011 to account for the actual or average weights used to account for carry-on baggage. Additionally, one or more of OpSpecs/MSpecs A096, A097, A098, and/or A099 must be issued to track the approved carry-on bag/personal item actual or average weights.

**C. No Carry-On Baggage Program.** Operators of small- and medium-cabin aircraft, as referenced in AC 120-27, current edition, may elect to only allow personal items onboard the aircraft. Operators with no-carry-on baggage programs must have procedures in place that ensure carry-on bags are either checked at the ticket counter, the gate, or plane side. Training programs should include the recognition of carry-on bags and procedures for removing such bags if they are inadvertently brought onboard the aircraft.

## **OPSPEC A012, PART 121 DOMESTIC OPERATIONS TO CERTAIN AIRPORTS OUTSIDE THE 48 CONTIGUOUS UNITED STATES AND ALASKA.**

**A. General.** Title 14 CFR part 119, § 119.3(2)(iv), definition of “domestic operation,” gives the Administrator the authority to allow a 14 CFR part 121 certificate holder with flag authority to conduct operations to and from specific airports outside the 48 contiguous United States and Alaska, in accordance with the rules applicable to domestic operations instead of the rules applicable to flag operations. OpSpec A012 is the method that the Administrator uses to grant this authorization.

**B. Applicability.** A012 is an optional OpSpec that is applicable to part 121 certificate holders who hold economic authority and are authorized in OpSpec A001 to conduct domestic and flag operations.

**C. Conditions and Limitations.** The following are some of the key conditions and limitations that must be met in order for certificate holders to operate under the authority granted by OpSpec A012:

1) The origin and destination airports must be listed in the certificate holder’s OpSpec C070 as a regular, provisional, or refueling airport. Although certificate holders list alternate airports in their C070, part 121, § 121.631(a) specifically states, “A certificate holder may specify any regular, provisional, or refueling airport, authorized for the type of aircraft, as a destination for the purpose of original dispatch or release.”

2) Destination airports outside of the contiguous United States that are not located in the state of Alaska must be within 950 nautical miles (NM) from the territorial limits of the 48 contiguous United States. The territorial limits of the 48 contiguous United States include the territorial waters of those States. The National Oceanic and Atmospheric Administration (NOAA) defines territorial waters as being 12 NM from the baseline of the State. Title 14 CFR part 1 contains a definition of the United States which includes the territorial waters and the airspace within.

3) An alternate airport for the destination must be listed in the dispatch release:

- a) If the flight is scheduled for more than 6 hours, regardless of the destination.
- b) For flights conducted to Alaska if the destination airport does not have more than one separate suitable runway authorized for the type of aircraft to be used.

4) Certificate holders must comply with all regulations applicable to domestic operations when conducting operations in accordance with OpSpec A012.

NOTE: Principal operations inspectors (POI) must ensure that certificate holders fully understand the provision in subparagraph C4), particularly when it comes to fuel planning. There are several OpSpecs paragraphs, such as B043, B044, and B343, which apply only to flag and supplemental fuel reserves. A certificate holder operating flights in accordance with the provisions of OpSpec A012 cannot apply any regulations or OpSpecs paragraphs applicable to flag or supplemental operations. In other words, OpSpec A012 cannot be combined with OpSpecs such as B043, B044, and B343.

NOTE: Please review the actual OpSpec A012 template in the Web-based Operations Safety System (WebOPSS) to view the full authorization contained in the OpSpec, along with all of the conditions and limitations listed therein.

**D. Policies and Procedures.** Certificate holders who are seeking approval for OpSpec A012 must have adequate policies, procedures, and training in place for dispatchers and flightcrew members to ensure that flights are scheduled, planned, and released in accordance with all of the limitations and provisions of OpSpec A012.

**E. If Conditions Cannot Be Met.** If all of the limitations and provisions contained in OpSpec A012 cannot be met, the certificate holder is prohibited from conducting operations in accordance with its use and must conduct operations in accordance with flag rules.

## **OPSPEC/MSPEC A013, OPERATIONS WITHOUT CERTAIN EMERGENCY EQUIPMENT.**

**A. General.** Use OpSpec/MSpecs A013 and A005 to approve deviations from the requirements for certain emergency equipment for extended over water operations for turbojet-powered airplanes.

1) Authorization for issuance requires the concurrence of the principal operations inspector (POI), the appropriate region, and the Air Transportation Division, AFS-200.

2) Approval is indicated by listing in OpSpec/MSpec A013 the make and model of the aircraft and the routes and/or areas to which the deviation applies.

### **B. Applicability of OpSpec/MSpec A013 and Associated Deviations.**

1) Part 91 subpart K fractional ownership program managers may apply for a deviation from part 91, § 91.509 to permit extended over water operations without carrying certain emergency ditching equipment.

2) Part 121 certificate holders may apply for a deviation from part 121, § 121.339 to permit extended over water operations without carrying certain emergency ditching equipment.

3) Part 135 certificate holders may apply for a deviation from part 135, § 135.167 to permit extended over water operations without carrying certain emergency ditching equipment.

**C. Granting Deviations. If the FAA grants a deviation and issues OpSpec/MSpec A013:**

1) Part 91K, fractional ownership program managers must list part 91, §§ 91.509(b)(2), (3), (4), and (5) in MSpec paragraph A005 with the reference to A013.

2) Part 121 certificate holders must list part 121, § 121.339(a)(2), (3), and (4) in OpSpec A005 with the reference to OpSpec A013.

3) Part 135 certificate holders must list part 135, § 135.167(a)(2) in OpSpec A005 with the reference to A013.

**D. Life Preserver Deviation.** It is FAA policy that deviations from the requirement to carry life preservers (§§ 121.339(a)(1), 135.167 (a)(1), or 91.509(b)(1), as applicable) will not be approved.

**E. Deviations From Carrying Liferafts.** Deviations from the requirements for carrying liferafts and the liferaft's required attached equipment may be approved. There is no individual deviation provision or requirement for a deviation for the following required items:

- Survival kits (§§ 91.509(e), 121.339(c), and, 135.167(c), as applicable);
- Pyrotechnic signaling devices (§§ 91.509(b)(3), 121.339(a)(3), and 135.167(b), as applicable); and
- Emergency locator transmitters (§§ 91.509(b)(3), 121.339(a)(4), and 135.167(b), as applicable).

**F. Permitted Areas of Operation.** The area(s) of operation permitted is any offshore area adjoining the 48 contiguous states of the United States, the Gulf of Mexico, and the Caribbean Islands, as follows:

1) The south and east coasts of the United States, below 35 degrees North latitude, the Gulf of Mexico, and the Caribbean Islands, not to exceed 30 minutes' flying time in still air with one-engine inoperative, or 162 nautical miles (NM) from the nearest shoreline, whichever is less.

2) The east coast of the United States, 35 degrees North latitude and above, not to exceed 30 minutes' flying time in still air with 1 engine inoperative or 100 NM from the nearest shoreline, whichever is less.

3) The west coast of the United States, not to exceed 30 minutes' flying time in still air with one-engine inoperative or 100 NM from the nearest shoreline, whichever is less.

**G. Requirements for Supporting Documentation for Deviation Request.** The operator must submit an application with supporting documentation for the deviation request with at least the following information about the conditions that must be met for the approval:

- 1) Aircraft operational capabilities for diversion due to an engine failure. This information must include drift down profiles, engine out cruise performance for two- and three-engine aircraft, and two-engine cruise performance for four-engine aircraft.
- 2) A graphical presentation of the areas and routes of en route operation and/or routes over which provisions of the deviation will apply, including proposed minimum en route altitudes and airports which could be used if diversion is necessary. The A013 authorization contains a limitation that in flight operations must not exceed the distance allowed under subparagraph F, as applicable, from a shoreline at any time. An exception is allowed for temporary maneuvering for weather avoidance.
- 3) Navigation and communication equipment requirements and capabilities for normal flight conditions and for engine inoperative flight conditions in the proposed areas of en route operation.
- 4) Existing and/or proposed procedures for diversion contingency planning and training curricula for flight and cabin crewmembers concerning ditching without liferafts.
- 5) A description of search and rescue facilities and capabilities for the proposed areas of en route operations.

**H. Reviewing the Application.**

1) The principal operations inspector (POI), in coordination with the principal maintenance inspector (PMI) and principal avionics inspector (PAI), must evaluate and substantiate submitted information. If a POI does not concur with the operator's proposal, the POI will forward a letter to the operator denying the application for a deviation with an explanation of the reasons for denial. If a POI concurs that the deviations should be approved, the POI will prepare and forward a recommendation along with the operator's application and supporting information to the Air Transportation Division, AFS-200, through the regional Flight Standards division.

2) AFS-200 will review the application, the supporting information, and the POI's recommendation. If AFS-200 does not concur with the POI's recommendation, AFS-200 will forward a letter to the POI, with a copy to the region, indicating nonconcurrency with an explanation of the reasons. If AFS-200 agrees with the POI's recommendation, AFS-200 will advise the POI by letter of the concurrence. With AFS-200 concurrence, the POI may approve the deviation by issuing A013 and A005.

**OPSPEC A014, IFR EN ROUTE OPERATIONS IN CLASS G AIRSPACE.**

**A. General.**

1) A014 provides the initial authorization for instrument flight rules (IFR) en route operations in Class G airspace. Other IFR en route authorizations may be found in OpSpecs B031, B034, B035, and B036, as applicable and appropriate.

2) OpSpec B032 prohibits special IFR en route operations in Class G airspace unless the POI approves such operations by issuing A014. IFR operations in Class G airspace are not provided any air traffic control (ATC) separation services. The certificate holder and the pilot in command (PIC) are responsible for avoiding obstacles and other air traffic.

**B. Prerequisites for Authorizing En Route IFR Operations.** Before authorizing en route IFR operations in Class G airspace to part 121, 121/135, 125, or 135 certificate holders:

1) The POI must confirm that the operator has a method or procedure for assuring that any facilities and services that this type of operation depends upon are operational during the periods in which flights are to occur.

2) The POI must also confirm that the operator has developed procedures and guidance for crewmember use while operating in areas of en route operations in Class G airspace. Aeronautical Information Publications (AIP) or flight information region (FIR) publications have broadcast in the blind procedures and other guidance for crewmember use when large areas of Class G airspace are within the area covered by the AIP or FIR.

NOTE: See Volume 4, Chapter 1, Section 1, General Navigation Concepts, Policies, and Guidance, and Section 4, Class II Navigation, for further discussion on en route operations in Class G airspace.

3) The reference to OpSpec B051 is to provide for part 121 reciprocating and turbo propeller powered aircraft operations only.

**C. Special Terminal Area IFR Operations.** OpSpecs C064, C080, and/or C081 now authorize special terminal area IFR operations in Class G airspace or at airports without an operating control tower. One or both types of these operations may be authorized.

**D. Program Manager Authorizations.** MSpec A014 authorizes the program manager to conduct IFR operations in Class G airspace and at airports without an operating control tower. Part 91 subpart K program managers will not have a separate MSpec C064 or C080.

### **OPSPEC A015, AUTOPILOT IN LIEU OF REQUIRED SECOND IN COMMAND.**

**A. General.** In accordance with part 135, § 135.105(b), a part 135 operator may apply for authorization to use an autopilot in place of a second in command. The principal operations inspector (POI) must coordinate with an avionics inspector to ensure each particular aircraft/autopilot combination is installed in accordance with FAA-approved data, is airworthy, and is operationally capable of maintaining control of the aircraft to the degree specified in § 135.105(c).

**B. Making Note of Conditions and Limitations.** List the aircraft make and model and the autopilot manufacturer and model identification in A015. Any conditions or limitations which the POI determines necessary for a particular aircraft/autopilot combination must also be listed. It is not necessary to repeat conditions or limitations already specified in an Airplane Flight Manual (AFM) or AFM supplement. If no conditions or limitations apply, enter the word “none” in that part of the listing.

**OPSPEC A016.** Reserved. It was split into four separate authorizations: A037, A038, A039, and A040.

### **OPSPEC A017, APPROVED SECURITY PROGRAM FOR HELICOPTERS.**

**A. General.** Title 49 of the Code of Federal Regulations part 1,500 does not include provisions for helicopter security programs. Helicopter operators who wish to enplane or deplane passengers or checked luggage into “sterile areas” must apply for, and receive authorization to use, an approved security program. A017 conveys the authority for helicopter operators to use an approved security program. Principal operations inspectors will not issue A017 without concurrence of the Civil Aviation Security Field Office.

**B. Using References.** Describe or reference the security program used by the operator in A017a. Reference sections of the operator’s manual that describe the program used by that operator. It is not necessary to control these references by date. Change the references only when a revision to the operator’s manual makes the reference in the OpSpecs incorrect. When the operator’s manual does not adequately describe the system and/or procedures used, a narrative description combined with references may be needed.

**C. Listing Airports and/or Heliports.** List the airports and/or heliports where operators must comply with the approved security program in A017b.

**OPSPEC A018, SCHEDULED HELICOPTER OPERATIONS.** A018 is issued to helicopter operators who operate scheduled passenger or cargo carrying operations.

**A. Completing Approach and Landing With Powerplant Failure.** Subparagraph A018a(2) authorizes scheduled helicopter operations along “Restricted Helicopter Routes” with helicopters which do not have Transport Category “A” one engine inoperative performance capabilities. The operator must show that helicopters using these routes can, at any point along the route and while at the minimum authorized altitude, complete a safe approach and landing if powerplant failure occurs. Determining compliance with these conditions will almost always be a controversial and difficult inspector task. For this reason, only currently qualified and highly experienced helicopter specialists should be used to evaluate these types of routes. In controversial cases, a team of helicopter specialists should be employed for this task.

**B. Defining Restricted Helicopter Routes.** OpSpec B050 must precisely define “Restricted Helicopter Routes.” This may be accomplished in accordance with instructions in Volume 3, Chapter 18, Section 4, Part B Operations Specifications—En Route Authorizations and Limitations, paragraph B050, subparagraph B(2)(e). In certain situations, detailed descriptions (including maps, charts, ATC letters of agreement, special provisions, and

limitations) of “Restricted Helicopter Routes” may be lengthy and complex. Therefore, it is permissible to incorporate these documents in B050 by reference.

**OPSPEC A019, AUTOMOTIVE GASOLINE AS AIRCRAFT FUEL.** A certificate holder may request authorization to use automotive gasoline as fuel in reciprocating engine aircraft used in 14 CFR part 135 cargo operations. When an inspector receives a request for this authorization, he must take all of the following actions before issuing A019:

**A. Approval to Use Automotive Gasoline.** In coordination with an Airworthiness inspector, determine that the specific aircraft is approved to use automotive gasoline as fuel.

**B. Inspect the List of Aircraft.** Inspect the proposed list of aircraft the certificate holder must maintain under 14 CFR part 119, § 119.59(b) for compliance with the provision of A019b(2).

**C. Inspect Certificate Holder Procedures.** In coordination with an Airworthiness inspector, determine that the certificate holder has written procedures which provide compliance with the requirements of OpSpec paragraphs A019b(3) and (4).

**D. Necessary Entry in Aircraft and Powerplant Historical Record.** The certificate holder must enter, in each appropriate aircraft and powerplant historical record, the following entry:

“This aircraft/powerplant has been operated using automotive gasoline as fuel and is prohibited for use in part 135 passenger carrying operations until the following events have been completed and documented by a person authorized to perform an annual inspection of this aircraft:

- 1) Remove all automotive fuel and fuel residue from the aircraft and powerplant fuel systems.
- 2) Inspect all components of the aircraft fuel system and appropriate components of the powerplants to determine that those components are airworthy and conform to the appropriate type design.
- 3) Record events (1) and (2) in the aircraft and/or powerplant records.”

**OPSPEC A020, AIRPLANE OPERATIONS WITHOUT INSTRUMENT RATED PILOTS.** A certificate holder who applies for this authorization may be issued A020 after each of the following considerations are satisfied.

**A. Criteria for an Isolated Area.** The area to be approved must be isolated. In determining whether an area is an “isolated area,” consider the following criteria:

- 1) Isolated areas may include small settlements or villages. Commercial transportation, such as bus or train, is not available. Major highways do not transit or penetrate isolated areas although secondary and unimproved roads (suitable for cars and trucks) may be

available. In many cases, the destinations are so isolated that air travel is the primary means of transportation.

2) Landing areas may be unimproved strips or water sites depending on the kinds of airplanes used and the time of year. Ski equipped airplane operations would be appropriate to frozen lakes or rivers and to suitable, snow covered land areas.

3) The size of isolated areas may vary considerably, depending on the needs of a particular certificate holder. However, part 135, § 135.243(d) states that flights may not exceed 250 nautical miles (NM) from the operator's base of operations. The point of departure, en route portion of flight, and landing site all must be within the boundaries of the approved isolated area.

4) Within isolated areas flight planning and navigational requirements are normally performed by pilotage only. Radio navigational signal coverage (very-high frequency omnidirectional range or nondirectional radio beacon facilities) is usually limited, or largely ineffective, in these areas. However, a radio facility may be located at or near a landing site without changing the classification of the isolated area.

5) Weather hazards that may be encountered in the proposed area and planning strategies that may reduce risk. (e.g., valleys may produce heavy fog in morning hours. Should a destination airport become fogged in while en route, consider using ABC airport as an alternate.)

**B. Application for Isolated-Area Operations Using a PIC Without an Instrument Rating.** Applicants requesting approval for these operations must hold an Air Carrier Certificate or an Operating Certificate and OpSpecs authorizing part 135 on-demand visual flight rules (VFR) day-only operations using single-engine land or seaplanes. Isolated-area operations using a pilot in command (PIC) without an instrument rating must not be authorized for commuter operations. Application for this authorization must be made by letter requesting amended OpSpecs. A map or current aeronautical chart identifying the area involved must be attached to the letter of application. This chart must clearly show the boundaries of the isolated area, the principal landing sites, and the distances from the operator's operations base.

**C. Review of the Application for Compliance.** Inspectors must review the application to confirm compliance with § 135.243(d)(3) (that the area is isolated) and § 135.243(d)(6) (flight distances do not exceed 250 NM). Inspectors must determine whether the certificate holder has a manual that incorporates instructions concerning operations in isolated areas. This manual must include a procedure that guarantees that noninstrument-rated PICs will not be used outside of the approved isolated areas. The principal operations inspector must determine that the following requirements are met before issuing A020.

1) All aircraft to be used are single, reciprocating engine powered, nine or fewer passenger airplanes equipped for at least day VFR operations.

2) Operations are limited to on demand, day VFR flights within the boundaries of the approved isolated area and not more than 250 NM distance from the base of operation.

3) Flight locating procedures are adequate.

4) The regional Flight Standards division concurs with the approval of the isolated area operation.

**OPSPEC A021, HELICOPTER EMERGENCY MEDICAL SERVICES (HEMS)/AIR AMBULANCE OPERATIONS—HELICOPTER.**

**A. General.** OpSpec A021 authorizes a certificate holder operating under part 135 to conduct air ambulance visual flight rules (VFR) emergency medical service operations in helicopters. The terms air ambulance, helicopter emergency medical services (HEMS), and helicopter emergency medical evacuation services (HEMES) are used interchangeably in regard to this authorization.

1) This HEMS/air ambulance authorization requires that the intended takeoff and landing site be adequate for the proposed operation considering the size of the site, type of surface, surrounding obstructions, and lighting.

2) If the HEMS operation is to be conducted at night, the takeoff and landing site must be clearly illuminated by a lighting source that will provide adequate lighting for the site itself and for any obstructions that could create potential hazards during approach, hovering, taxiing, and departure operations.

**B. Provisions and Limitations.** OpSpec A021 specifies that the certificate holder may not use a pilot in command (PIC) in HEMS operations unless that PIC has satisfactorily completed the certificate holder's FAA-approved training program for such operations. Because HEMS operations often involve flights during periods of inclement weather, the training program for HEMS operations must include a segment that covers the recovery from inadvertent instrument meteorological conditions encountered because of unforecasted weather conditions.

1) OpSpec A021 specifies the conditions (day/night), area (local/cross country), ceiling, and visibility the certificate holder is authorized to use for HEMS operations in Class G (uncontrolled) airspace. Night conditions are further defined by identifying different minimums for high and low lighting conditions. In addition, OpSpec A021 specifies different ceiling and visibility minimums for these considerations and areas when operating in mountainous and nonmountainous areas. Each specific combination of conditions and areas are listed in OpSpec A021.

a) The possible combinations of conditions and area include time of day (night or day), level of light available at night (low and high lighting conditions), area of operation (local or cross country), and the kind of area (mountainous or non-mountainous). Each of these combinations is specified along with ceiling and visibility authorizations.

b) Instrument flight rules (IFR) operators authorized to fly point-in-space special instrument approach procedures (IAP) with a "Proceed VFR" transition to the heliport must apply their visual flight rules (VFR) weather minimums in determining their landing minimums.

1. Since these operations require that the aircrew be specifically qualified for the use of these approaches, the visual segment area may be considered "local" in nature.

2. Because the pilot and aircraft are trained, equipped, and authorized as fully IFR capable under Part H authorizations, the area may be considered the equivalent of a “high lighting conditions” area at night.

3. The effect of precipitous terrain has been accounted for in the development of the minimum descent altitude (MDA) so, for purposes of applying VFR minimums in determining IFR landing visibility minimums, the area may be considered “nonmountainous.” For planning purposes, this consideration applies when the distance from the missed approach point to the landing area is less than 3 NM.

4. Therefore, when applying the VFR weather minimums of OpSpec A021 in determining the minimums for all Special PinS approaches, with a “Proceed VFR” transition to the heliport, apply the local, nonmountainous, day, or night high lighting conditions (as appropriate) minimums in Table 1 of OpSpec A021 in determining the landing minimum if the distance from the missed approach point to the heliport is 3 NM or less. However, if the distance from the missed approach point to the heliport exceeds 3 NM, the certificate holder must apply the VFR minimums prescribed in Table 1 of OpSpec A021 appropriate to the actual existing conditions (local, mountainous, day or nonmountainous, cross country, night, etc.).

NOTE: For instrument approaches with a “Proceed visually” visual segment, the minimums provided in OpSpec A021 do not apply; the minimums specified in the instrument approach procedure apply.

c) Requests for lower weather minimums for operations in uncontrolled airspace must be coordinated with and approved by AFS-200 through the regional Flight Standards division (RFSD). These requests must follow the nonstandard OpSpec approval process outlined in Volume 3, Chapter 18, Section 2, Automated Operations Safety System (OPSS), paragraph 3-713, Procedures for Requesting Nonstandard Authorizations.

**C. Local Area.** OpSpec A021 contains a description of the “local area.” The local area is an area designated by the certificate holder which generally may not exceed 50 NM from the dispatch location, taking into account man made and natural geographic terrain features that are easily identifiable by the PIC, and from which the PIC may visually determine a position at all times.

1) The local area may be the same for night and day operations unless the terrain features used for the day local area would not be discernible at night. In such a case, both a day and night local area must be described.

2) For example, in mountainous or desert locations, geographical features may facilitate day operations but because of the lack of such features and/or lighted landmarks, night operations would not be authorized.

3) Additional information on local flying areas is provided in Volume 4, Chapter 5, Section 3, Air Ambulance Service Operational Procedures, paragraph 4-947, Local Flying Area for HEMS Operations.

**D. Additional Information.** For more information, see OpSpec A024, Air Ambulance Operations—Airplane, and OpSpec A050, Helicopter Night Vision Goggle Operations, in this section.

**OPSPEC A022, APPROVED EXIT ROW SEAT PROGRAM.** Reserved.

**OPSPEC A023, USE A PROGRAM DURING GROUND ICING CONDITIONS.**

**A. Part 121.** Part 121, § 121.629(c) requires part 121 certificate holders to have an approved ground deicing/anti-icing program, unless the certificate holder complies with § 121.629(d), which requires an outside the aircraft pretakeoff contamination check. Principal inspectors (PI) will issue OpSpec A023 to authorize the use of an approved ground deicing/anti-icing program or the use of an outside the aircraft pretakeoff contamination check. See Volume 3, Chapter 27, Ground Deicing/Anti icing Programs, for guidance on approving a ground deicing/anti-icing program.

**B. Parts 125 and 135.** Part 125, § 125.221 and part 135, § 135.227 require parts 125 and 135 certificate holders who operate during ground icing conditions to have approved aircraft pretakeoff contamination check procedures. PIs will issue OpSpec A041 to authorize a pre takeoff contamination check (not necessarily outside the aircraft). A part 125 or 135 certificate holder may choose to comply with § 121.629(c) by having an approved ground deicing/anti icing program, in which case the PI will issue OpSpec A023. If a part 125 or 135 operator chooses to operate without a pre takeoff contamination check or without a § 121.629(c) program, then PIs may only authorize them to operate when ground icing conditions do not exist by issuing OpSpec A042. See Volume 3, Chapter 27 for guidance on approving a ground deicing/anti-icing program.

**OPSPEC A024, AIR AMBULANCE OPERATIONS—AIRPLANE.**

**A. General.** Airplane air ambulance operations do not differ significantly from other types of airplane air carrier operations. A024 authorizes a certificate holder operating in accordance with parts 121 or 135 to conduct EMS operations in airplanes.

**B. Requirement for Aircraft Used in Air Ambulance Operations.** The aircraft used in air ambulance operations must be equipped with at least medical oxygen, suction, and a stretcher, isolette, or other approved patient restraint/containment device. The aircraft need not be used exclusively as an air ambulance aircraft, and the equipment need not be permanently installed.

**C. Air Ambulance Operations Definition.**

1) Air transportation of a person with a health condition that requires medical personnel as determined by a health care provider; or

2) Holding out to the public as willing to provide air transportation to a person with a health condition that requires medical personnel including, but not limited to, advertising, solicitation, association with a hospital or medical care provider.

**D. Complete the Training Program Before Starting Air Ambulance Flights.** A024 specifies that the flightcrew must satisfactorily complete the certificate holder's approved training program prior to commencement of air ambulance flights.

**E. Additional Information.** For further guidance see Volume 4, Chapter 5, Air Ambulance Operations, and OpSpec A021, Air Ambulance Operations—Helicopter.

#### **OPSPEC/MSPEC A025, ELECTRONIC RECORDKEEPING SYSTEM.**

**A. General.** A025 is required for 14 CFR part 121 air carriers in accordance with part 121, § 121.683. It is an optional paragraph for 14 CFR part 91 subpart K (part 91K) program managers and 14 CFR part 135 air carriers. Recordkeeping for part 121 air carriers is covered in part 121 subpart V, and 14 CFR part 145 for repair stations.

1) The full description of the electronic recordkeeping system may be kept in the operator's General Operations Manual (GOM). Reference the GOM appropriately in A025.

2) Volume 3, Chapter 31, Sections 1–4 give details of the requirements for approving an air carrier's recordkeeping system.

3) Volume 6, Chapter 2, Section 24 provides guidance for inspections that include the review of required records.

**B. Additional Information.** See the A025 job aid in the automated Operations Safety System (OPSS) for other current information.

**C. Part 145.** For part 145 repair stations, A025 identifies the electronic/digital recordkeeping system acceptable to the administrator. It also identifies the certificate holder and their electronic signature procedures.

#### **OPSPEC A026, RESTRICTED OPERATION OF CERTAIN STAGE 2 AIRPLANES.** Reserved.

#### **OPSPEC/MSPEC A027, LAND AND HOLD SHORT OPERATIONS. (OPTIONAL)**

**A. General.** OpSpec A027 authorizes Land and Hold Short Operations (LAHSO) for part 121, 125, and 135 certificate holders, and part 91 subpart K program managers. Certificate holders must meet certain requirements for operational policies, procedures, and training for LAHSO before the principal operations inspector (POI) may issue this OpSpec. No operator may participate in LAHSO unless it has accomplished flightcrew training. FAA Air Traffic Order 7110.118, Land and Hold Short Operations (LAHSO), must be used in conjunction with the information provided in this paragraph.

NOTE: Waivers will not be issued to any LAHSO procedures.

**B. Requirement for Participating in LAHSO.** Operators may not participate in LAHSO and the FAA will not issue OpSpec A027 until the following are met:

1) Local Flight Standards District Office (FSDO) managers and local and regional Air Traffic managers must coordinate, (in accordance with FAA Order 7210.3, Facility Operation and Administration and Order 7110.118) the following for airports in their district conducting LAHSO:

- Participation of Flight Standards Service (AFS) representatives in local LAHSO development teams;
- Review of air traffic control (ATC) procedures to ensure that procedures are consistent with aircraft/aircrew performance capabilities according to the type of aircraft operations involved;
- Assisting in the identification of eligible aircraft that may operate on each runway, based on the available landing distance (ALD); and
- Ensuring that no air carrier is approved to operate aircraft to a runway, for the purpose of conducting LAHSO, with less than that specified on Order 7110.118, appendix 1, Aircraft Group/Distance Minima.

NOTE: Aircraft not identified in Order 7110.118, appendix 1 do not participate in LAHSO. Aircraft additions to Appendix 1 may be requested through the local ATC facility manager to Air Traffic Service (AAT) and AFS at FAA Headquarters.

2) POI.

a) Each POI must review the following:

- FAA Order 7110.118, in order to identify AFS roles and responsibilities to support joint development of procedures for conducting LAHSO at specific airports. FAA Order 7110.118 may be found at <http://ato.faa.gov>.

NOTE: If Internet access is unavailable, contact ATP 120 at (202) 267-7265 for the most current guidance document.

- Regulatory requirements, as applicable: parts 125 and 135 subpart I; and §§ 91.1037, 23.75; 25.125; and 121.195.

b) Each POI must ensure the following actions have been accomplished before issuing or re-issuing, as appropriate, OpSpec A027:

- The air carrier has instituted flightcrew member training on LAHSO;
- The air carrier has a system that accurately determines the landing distance or maximum landing weight required for LAHSO and that ensures no aircrew accepts a landing clearance to a runway with a landing distance less than the distance identified in FAA Order 7110.118, appendix 1;
- The air carrier has provided flightcrew members with all necessary information needed to conduct LAHSO; and

- Paragraph A027c describes the location of the air carrier's LAHSO procedures. These procedures may be contained in any flightcrew member manual or document readily available to flightcrew members for reference.

NOTE: The FAA strongly recommends that all carriers provide aircrews with in flight single source documentation on LAHSO procedures. See Volume 4, Chapter 3, Section 5, Selected Practices, paragraph 600, Land and Hold Short Operations (LAHSO), for additional information.

**OPSPEC A028—AIRCRAFT WET LEASE ARRANGEMENTS.** In FAA use, the term “wet lease” is any leasing arrangement whereby a person agrees to provide an entire aircraft and at least one crewmember (part 119, § 119.3). This OpSpec authorizes certificate holders who conduct common carriage operations under parts 121 and 135 to enter into wet lease arrangements with other part 119 certificate holders. See Volume 12, Chapter 2, Section 9, Lease, Interchange, and Charter Arrangements, for the wet lease of any aircraft by a U.S. air carrier to a foreign air carrier or foreign person engaged in common carriage wholly outside the United States. Volume 3, Chapter 13, Section 4, Wet Lease Agreements, provides direction and guidance for processing and authorizing wet lease arrangements.

**A. Reviewing Wet Lease Arrangements.** When reviewing proposed § 119.53 wet lease arrangements between U.S. certificate holders authorized to conduct common carriage operations, there are two critical factors to consider: (1) whether or not the lessee has exclusive legal possession and use of the entire aircraft, and (2) whether or not the lessor retains actual possession and operational control of the aircraft by virtue of providing and controlling the crewmembers.

**1) Possession.** In an FAA-defined wet lease, the lessor surrenders legal possession of specific aircraft to the lessee, but in general retains actual possession of the aircraft by virtue of providing and controlling the crewmember(s). This form of lease implies that the lessee has possession or custody, not ownership, of the aircraft for a specified period of time or a defined number of flights.

a) The lessor is the certificate holder who grants legal possession and use of specific aircraft to another certificate holder.

b) The lessee is the certificate holder who obtains legal possession and use of specific aircraft from another certificate holder.

c) If the lessor/grantor never transfers legal possession or custody of the entire aircraft, the arrangement is not a § 119.53 wet lease. Likewise, if the arrangement makes it clear that actual possession of the entire aircraft is never transferred; the arrangement is not a § 119.53 wet lease. In this case the arrangement might actually be a charter. An example of such an arrangement is a provision of “aircraft with crew” agreement where no legal or actual transfer of the possessory rights to the aircraft occurs. Such an arrangement is a services agreement for provision of a flight service to a customer even if characterized as a wet lease by the parties to the agreement.

**2) Operational Control.** As defined in 14 CFR part 1, operational control is the exercise of authority over initiating, conducting, or terminating a flight. The certificate holder exercising operational control—generally the lessor—is responsible for the safety and regulatory compliance of the flights. The FAA rarely has allowed operational control to be exercised by the lessee certificate holder. An example of such a case entails a lessee certificate holder who obtains legal possession of the lessor certificate holder’s aircraft and, as part of the arrangement, the lessor agrees to furnish two flight attendants with the aircraft. In addition, the lessee furnishes the pilot crewmembers to operate the aircraft. In this case, the lessee certificate holder obtains both actual and legal possession of the aircraft and operational control by virtue of providing and controlling the pilot crewmembers. If there is a question that the lessee may have operational control, the lease must also be reviewed by AFS-200 and AGC-300. In this case, both must concur in the issuance of OpSpec A028.

**3) Wet Lease Types.** Operational control under an FAA-defined wet lease will be one of two types.

a) The lessor certificate holder will have operational control of the listed aircraft. If the lessor certificate holder will have operational control, that certificate holder is authorized to conduct operations in accordance with each applicable wet lease arrangement identified in Table 1 of the OpSpec.

1. The certificate holder issued this authorization must at all times be responsible for and maintain the operational control and airworthiness of each aircraft identified in each lease arrangement. The lease arrangement(s) must be listed in Table 1 of the OpSpec.

2. The nationality, registration, and serial number of each aircraft to be used under the terms of the wet lease arrangement will be identified in paragraph D080 or D087, as applicable, and D085 of the certificate holder’s OpSpecs.

3. While conducting operations under this authorization, the lessor may use the call sign and flight number(s) of the lessee, provided that, for all flights the lessor certificate holder explains in the remarks section of the applicable flight plan that the flight is actually being conducted under the call sign and flight number(s) of the lessee.

4. Both lessor and lessee certificate holders will have their role and information of the wet lease arrangement documented in OpSpec A028 of their respective OpSpecs.

b) The lessor certificate holder will not have operational control of the listed aircraft. This type of arrangement is rare. For the FAA to approve such an arrangement, the parties to it will have to establish to the FAA’s satisfaction how the lessee will exercise operational control of the aircraft. For the party to each applicable wet lease who will not have operational control, that determination must be stated in Table 2, of the respective certificate holders’ OpSpecs. Under this example, the lessor certificate holder not having operational control will exercise the wet lease arrangement(s) listed in Table 2 with the following limitations and provisions:

1. The lessee, as the party exercising operational control, is singularly responsible for the safety and regulatory compliance of the flights.
2. The lessee, as the party having operational control in the wet lease arrangement listed in Table 2, must at all times be responsible for, and maintain the operational control and airworthiness of the aircraft identified in each wet lease arrangement listed.
3. The lessor certificate holder is not authorized to have, and may not have, operational control of any operation conducted by the lessee certificate holder under this subparagraph of the OpSpec.
4. Both lessor and lessee certificate holders will have their role and information of the wet lease arrangement documented in OpSpec A028 of their respective OpSpecs.

**B. Wet Leasing Prohibitions.** Section 119.53(b) prohibits part 119 certificate holders' wet leasing from a foreign air carrier or any other foreign person or any person not authorized to engage in common carriage. This prohibition is to prevent confusion as to which carrier would be held accountable for the safety of the flight, which country's air carrier safety rules would be followed, and which civil aviation authority would have primary oversight responsibilities.

1) It is common practice among commercial operators to enter into agreements which the two parties characterize as wet leases but which actually are charters when compared to the FAA definition of wet lease. The term "charter" is not defined in FAA regulations. However, in operational terms, a charter is an agreement whereby a person provides lift capacity (cargo or passengers) to another person for a defined period of time or number of flights. In other words, a charter is a services agreement for the provision of a flight service—not transfer of possession or custody of an aircraft and the FAA expects the charter operator providing an aircraft with crew to have operational control over all flights conducted pursuant to the agreement.

2) A U.S. air carrier that enters into an agreement with a foreign air carrier for both an aircraft and crew to perform part of the U.S. air carrier's international operations may not be entering into a wet lease as defined by the FAA if certain conditions (described below) are met. Note that, for commercial reasons both U.S. and foreign air carriers may characterize such arrangements as wet leases even though they are more in the nature of a charter. These agreements, even if characterized by the parties as wet leases, are a type of charter and are subject to the requirements of 14 CFR part 212.

3) In some commercial arrangements, the term provision of aircraft with crew (or similar phrasing) rather than charter may be used. The provision of aircraft with crew arrangement does not involve any legal or actual transfer of the possessory rights to the aircraft; it is a services agreement or arrangement for a lessor to provide a flight service and does not transfer possession of the aircraft to the lessee.

4) Charter or provision of aircraft with crew arrangements are commercial arrangements between carriers that require a statement of authorization from the Office of the

Secretary of Transportation (OST); they are not documented by OpSpec. The OST authorization process includes a determination that the requirements of part 212 are met and the proposed operation is in the public interest. Such determinations are made in coordination with the FAA, which will review the arrangements and make determinations relating to operational control, possession of the aircraft, the safety oversight of the operation, and the safety audit of the foreign air carrier. Where a foreign air carrier will be involved in such a lease or provision of aircraft with crew arrangement to a U.S. air carrier, approval will be subject to the following requirements:

- a) The foreign air carrier involved holds a foreign air carrier permit or exemption authority from OST to conduct charter operations;
- b) The country that issued the foreign air carrier's air operator certificate has been rated as Category 1 under the FAA's International Aviation Safety Assessment program.
- c) The operations to be conducted represent foreign air transportation and not prohibited cabotage, in accordance with Title 49 of the United States Code, § 41703;
- d) The foreign air carrier would be conducting a flight or series of flights. The U.S. air carrier has the economic authority for the flight or series of flights that will be conducted with the foreign air carrier's aircraft and crew;
- e) The foreign air carrier files an application for a statement of authorization for any such operation proposed;
- f) The foreign air carrier demonstrates that it would be in operational control of the proposed operation, for example, by providing with its application, for review by the FAA, copies of the lease arrangement for the aircraft with crew, that it has entered into with the U.S. certificated air carrier;
- g) The foreign air carrier demonstrates that it will retain legal and actual possession of the aircraft;
- h) The foreign air carrier provides evidence, for example, that the U.S.-certificated air carrier involved has conducted a safety audit of the foreign carrier, consistent with an FAA-approved safety audit program, and has submitted a report of that audit to the FAA for review; and
- i) The FAA notifies the OST that it has determined that operational control of the proposed flights rest with the foreign air carrier applicant, that the oversight of the operation will remain with the country that issued the foreign air carrier's air operator certificate, and that the safety audit meets the standards of the U.S.-certificated air carrier's safety audit program.

**OPSPEC A029, AIRCRAFT INTERCHANGE ARRANGEMENTS.** Volume 3, Chapter 13, Section 5, Interchange Agreements, provides direction and guidance for processing and authorizing interchange arrangements. When an interchange arrangement is authorized, A029 must be issued to both parties of the interchange agreement by each responsible principal

operations inspector. All interchange arrangements authorized for an operator must be listed in A029. Enter the name of the operator who would normally operate the aircraft if an interchange agreement were not in effect in the column labeled Primary Operator. List the name of the other party to the interchange agreement in the column labeled Interchange Operator. List the aircraft make/model/series of the aircraft used and all specified interchange points for each agreement in the appropriate columns. If it is necessary to specify other conditions or limitations such as expiration dates, they should be specified by adding text to A029.

## **OPSPEC A030, SUPPLEMENTAL OPERATIONS BY A CERTIFICATE HOLDER AUTHORIZED TO CONDUCT DOMESTIC OR FLAG OPERATIONS.**

### **A. General.**

1) A030 is an optional OpSpec that authorizes a 14 CFR part 121 certificate holder to conduct supplemental operations between airports listed for scheduled operations in that certificate holder's OpSpec C070. Principal operations inspectors (POI) may issue A030 to a certificate holder who is authorized in OpSpec A001 to conduct the following types of operations:

- Domestic and supplemental.
- Flag and supplemental.
- Domestic, flag, and supplemental.

2) POIs may not issue A030 to a certificate holder who is only authorized to conduct supplemental operations because such a certificate holder is not issued an OpSpec C070. Thus, the certificate holder would be required to operate under supplemental rules at all times.

### **B. Authorizations.**

1) **Conducting Supplemental Operations in Accordance with Domestic or Flag Rules to Airports Listed in C070.** OpSpec A030 subparagraph b authorizes a certificate holder with domestic and/or flag authority to conduct supplemental operations using domestic or flag rules, as applicable, between the regular, provisional, and refueling airports listed in the certificate holder's OpSpec C070. A030 may not be applied to airports listed solely as alternate airports.

2) **Conducting Supplemental Operations in Accordance with Supplemental Rules to Airports Listed in C070.** OpSpec A030 subparagraph c authorizes a certificate holder with domestic and/or flag authority to conduct supplemental operations between the airports listed in the certificate holder's C070 under supplemental rules.

3) **Optional Nonstandard Provisions.** OpSpec A030 contains a field in which POIs can enter optional/nonstandard text. This field is commonly referred to as "TEXT99." POIs may not issue nonstandard text to OpSpec A030 without obtaining prior approval from the Air Transportation Division (AFS-200).

**OPSPEC/MSPEC/LOA A031, OUTSOURCED TRAINING: 14 CFR PART 91K, CONTRACT TRAINING; 14 CFR PARTS 121 AND 135, ARRANGEMENTS WITH TRAINING CENTERS, AIR AGENCIES, AND/OR OTHER ORGANIZATIONS FOR CERTIFICATE HOLDER TRAINING; 14 CFR PART 125, FLIGHT CREWMEMBER REQUIREMENTS; 14 CFR PART 125 LETTER OF DEVIATION AUTHORITY (LODA A125) HOLDERS.**

**A. General.** OpSpec/MSpec/LOA A031 authorizes a certificate holder/operator/program manager to enter into a contract with an outside training organization to conduct the training, testing, and/or checking of crewmembers (pilots, flight engineers, and Flight Attendants (F/A)), aircraft dispatchers (part 121 domestic and flag), or other persons authorized to exercise operational control (part 121 supplemental) required by the applicable 14 CFR part. As detailed below, a contracted training organization may be another certificate holder, 14 CFR part 142 training center, program manager, or a training center not certificated under part 142.

**1) Part 91K.** In accordance with part 91, § 91.1075, a program manager may only contract with another part 91K program manager, a part 121 or part 135 certificate holder, a part 142 training center, or a training center not certificated under part 142 to conduct the training, testing, and/or checking required by part 91K.

**2) Part 121.** In accordance with part 121, § 121.402, a part 121 certificate holder may only contract with another part 121 certificate holder or a part 142 training center to conduct the training, testing, and/or checking required by part 121.

**3) Part 125.** In accordance with part 125, § 125.296, part 125 certificate holders and part 125 Letter of Deviation Authority (LODA) holders may only contract with a part 142 training center to conduct the training, testing, and/or checking required by part 125.

**4) Part 135.** In accordance with part 135, § 135.324, a part 135 certificate holder may only contract with another part 135 certificate holder or a part 142 training center to conduct the training, testing, and/or checking required by part 135.

**B. Applicability.** LOA A031 is mandatory for part 125 LODA holders. OpSpec/MSpec A031 is optional for parts 91K, 121, 125, and 135 certificate holders/program managers.

**C. Limitations and Provisions—Parts 91K, 121, and 135.** A certificate holder or program manager must comply with the following limitations and provisions to operate under the authority granted by OpSpec/MSpec A031. The certificate holder/program manager must:

**1)** Ensure that all arrangements made with each training organization are fully compliant with the certificate holder/program manager's OpSpecs/MSpecs, the certificate holder/program manager's approved training program, and the CFRs.

**2)** Ensure that each contracted training organization conducts all training, testing, and/or checking in accordance with the certificate holder/program manager's applicable 14 CFR part and approved training program.

3) Ensure that each contracted training organization has adequate facilities, equipment, competent personnel, and an organizational structure to support the training, testing, and/or checking in accordance with the certificate holder/program manager's approved training program.

4) Have a program or method outlined in the approved training program that enables the certificate holder/program manager to detect, identify, and implement timely corrective action for all deficiencies detected in the training, testing, and/or checking provided by each training organization.

5) Ensure that each contract instructor, contract check pilot, and contract flight engineer conducting training, testing, and/or checking of the certificate holder/program manager's personnel is trained, qualified, and authorized to conduct the appropriate training, testing, and/or checking in accordance with the certificate holder/program manager's applicable 14 CFR part and approved training program.

6) Ensure that its aircraft configuration(s) and FAA-approved procedures are effectively supported by each training organization's equipment, training, testing, and/or checking. Additionally, the certificate holder/program manager must ensure that differences between its equipment and the training organization's equipment are addressed by conducting appropriate differences training.

**D. Additional Limitations and Provisions—Part 91K.** Part 91K program managers must also conduct a review and audit of each training agreement and organization at least once every 2 calendar-years from the date shown in the audit date column of Table 1 of A031. This review and audit must include an evaluation of the items listed in subparagraphs C1) through 6). Each audit with evaluation must be submitted to the program manager's principal operations inspector (POI) no later than the last business-day of the month following the due month. The date of the most recent audit must be entered into Table 1 of MSPEC A031.

**E. Additional Limitations and Provisions—Parts 121 and 135.** Parts 121 and 135 certificate holders must also:

1) Conduct a standardization review of each training organization and provide the results of this review to the certificate holder's POI. A satisfactory standardization review must be submitted to the POI prior to the issuance of OpSpec A031 and the beginning of contract training, testing, and/or checking. (A sample standardization review is located in the Web-based Operations Safety System (WebOPSS) "Guidance" for OpSpec A031.)

2) Conduct initial and recurring audits of each training agreement and organization. Each audit must include an evaluation of the items listed above in subparagraphs C1) through 6), including an in-person evaluation of actual training, testing, and/or checking being conducted by the training organization for the certificate holder's crewmembers and/or aircraft dispatchers. The first audit must be completed and submitted to the POI within 60 days of the commencement of contract training, testing, and/or checking. Recurrent audits must be completed at least once every 24 calendar-months and submitted to the POI no later than the last business-day of the

month following the due month. The date of the most recent audit must be entered into Table 1 of OpSpec A031. (A sample audit is located in the WebOPSS “Guidance” for OpSpec A031.)

3) Permit and facilitate access to its aircraft and cockpits by employees of each training organization for the purpose of maintaining their line-performance/line-observation currency as contract instructors and/or contract check pilots.

**F. Additional Information.** More detailed information regarding contracting with a part 142 training center can be found in Volume 3, Chapter 54, Section 5. POIs must review this information prior to issuing OpSpec/MSpec/LOA A031. POIs should refer to the A031 Job Aid contained in the WebOPSS “Guidance” for proper completion of Table 1.

**OPSPEC A032, ADOPTION OF FLIGHT CREWMEMBER FLIGHT TIME LIMITATION RULES TO ESTABLISH FLIGHT ATTENDANT DUTY AND FLIGHT TIME LIMITATIONS AND REST RESTRICTIONS; MSPEC A032, FLIGHT ATTENDANT FLIGHT, DUTY, AND REST RULES.** The program manager may be authorized to adopt the flightcrew member’s flight, duty, and rest requirements for its flight attendants in accordance with written approved procedures as provided in part 91, § 91.1062(b) and described or referenced in MSpec A032.

**OPSPEC A033, TITLE 14 CFR PART 135 FLIGHT AND REST TIME LIMITATIONS FOR CERTAIN PART 121 AND CERTAIN 135 OPERATIONS.**

**A. General.** A033 is issued to authorize the certificate holder to conduct:

1) Certain part 121 operations with airplanes having a passenger seat configuration of 30 seats or fewer and a payload capacity of 7,500 pounds or less in accordance with part 121, §§ 121.470(a), 121.480, and/or 121.500, using flight and rest time limitations under part 135, §§ 135.261 through 135.273, and/or

2) Certain 14 CFR part 135 operations using flight and rest time limitations under § 135.265, in lieu of any other §§ 135.261 through 135.273.

**B. Compliance With Applicable 14 CFR Sections.** Part 119 establishes that all certificate holders conducting scheduled passenger-carrying operations with turbine-powered airplanes and/or airplanes having 10 or more passenger seats must operate under part 121, § 121.470(a), Flight Time Limitations, Domestic Operations; § 121.480, Flight Time Limitations, Flag Operations; and § 121.500, Flight Time Limitations, Supplemental Operations. These sections contain, in pertinent part, the provisions that a certificate holder conducting operations with airplanes having a passenger seat configuration of 30 seats or fewer, excluding each crewmember seat, and a payload capacity of 7,500 pounds or less may comply with the applicable requirements of §§ 135.261 through 135.273. Section 135.261(a)(2) allows certain part 135 certificate holders to comply with the requirements of § 135.265, when OpSpec A033 is issued.

**MSPEC A033, FLIGHT AND REST TIME REQUIREMENTS.** As allowed by part 91, § 91.1057(j), the program manager may be authorized to conduct program operations using the

applicable unscheduled flight time limitations, duty period limitations, and rest requirements of part 121 or 135, instead of the flight time limitations, duty period limitations, and rest requirements of part 91 subpart K, as described in MSpec A033.

#### **OPSPEC/MSPEC A034, ADVANCED QUALIFICATION PROGRAM (AQP).**

**A. When to Issue OpSpec A034.** Following initial/Phase IV approval, all Advanced Qualification Program (AQP) air carriers must be issued OpSpec paragraph A034. For all AQP documents and phases for which the Extended Review Team (ERT) is designated as the approval authority, the FAA manager AQP and the principal operations inspector (POI) or training center program manager (TCPM) will cosign the approval letters. Following approval for continuing operation (Phase V), the POI will manage and sign approved curriculum outline changes.

**B. About AQP.** AQP is a voluntary program; Flight Standards Service encourages air carriers to participate. AQP provides for enhanced curriculum development and a data driven approach to quality assurance along with the flexibility to target critical tasks during aircrew training. The AQP methodology directly supports the FAA's safety enhancement goals. The Voluntary Safety Programs Branch, AFS-230, will provide assistance to the Flight Standards District Office (FSDO), certificate management office (CMO), or Certificate Management Unit (CMU) from initial application through the final fleet approval as a collaborative effort. An accepted air carrier AQP application will initiate the AFS-230/FSDO/CMO/CMU partnership. AFS-230 will assist in the development, implementation, and review as well as follow on reviews for the air carrier's AQP. AFS-230 and the FSDO/CMO/CMU will manage program approvals and revisions through an ERT process.

**C. Additional Information.** More detailed information on AQP can be found in Volume 3, Chapter 21, The Advanced Qualification Program, Sections 1 through 5.

#### **OPSPEC A035, U.S. REGISTERED AIRCRAFT—FOR PART 129 ONLY.**

**OPSPEC A036.** Reserved.

**OPSPEC A037, BASIC 14 CFR PART 135 OPERATOR—COMMUTER AND ON DEMAND OPERATIONS.** A016 was comprised of four different authorizations. Because of the new OPSS, the four authorizations were split into OpSpecs A037, A038, A039, and A040. The four types of operations authorized are: Single-Pilot Operators, Single Pilot-in-Command Operators, Basic Part 135 Operators (On-Demand Operations Only), and Basic Part 135 Operators (Commuter and On-Demand Operations). Further direction and guidance for certification of these types of operators are in Volume 2, Chapter 4, The Certification Process—Title 14 CFR Part 135, sections 1 through 6. Deviations are required to authorize a single pilot in command or a basic part 135 operator. The appropriate regulatory sections that an operator is authorized deviations from will also be listed in OpSpec A005.

**OPSPEC A038, BASIC TITLE 14 CFR PART 135 OPERATOR—ON DEMAND OPERATIONS ONLY.** A016 was comprised of four different authorizations. Because of the new OPSS, the four authorizations were split into OpSpecs A037, A038, A039, and A040. The four types of operations authorized are: Single-Pilot Operators, Single Pilot-in-Command

Operators, Basic Part 135 Operators (On-Demand Operations Only), and Basic Part 135 Operators (Commuter and On-Demand Operations). Further direction and guidance for certification of these types of operators are in Volume 2, Chapter 4, The Certification Process—Title 14 CFR Part 135, sections 1 and 2. Deviations are required to authorize a Single Pilot in Command or a Basic Part 135 Operator. The appropriate regulatory sections that an operator is authorized deviations from will also be listed in OpSpec A005.

**OPSPEC A039, SINGLE PILOT IN COMMAND OPERATOR (PART 135).** A016 was comprised of four different authorizations. Because of the new OPSS, the four authorizations were split into paragraphs A037, A038, A039, and A040. The four types of operations authorized are: Single-Pilot Operators, Single Pilot-in-Command Operators, Basic Part 135 Operators (On-Demand Operations Only), and Basic Part 135 Operators (Commuter and On-Demand Operations). Further direction and guidance for certification of these types of operators are in Volume 2, Chapter 4, Section 2, Phase 2—Formal Application. Deviations are required to authorize a single pilot in command or a basic part 135 operator. Therefore, the appropriate regulatory sections that the operator is authorized deviations from must also be listed in OpSpec A005.

**OPSPEC A040, (PART 135 AND 135/121 DATABASES ONLY) SINGLE PILOT OPERATOR (PART 135).** A016 was comprised of four different paragraphs. Because of the new Operations Safety System, the four authorizations were split into paragraphs A037, A038, A039, and A040. The four types of operations authorized are: Single Pilot Operators, Single Pilot-in-Command Operators, Basic Part 135 Operators (On-Demand Operations Only), and Basic Part 135 Operators (Commuter and On-Demand Operations). Further direction and guidance for certification of these types of operators are in Volume 2, Chapter 4, Section 1. It is not required to issue an A005 for the single pilot operator for deviations from the requirements for an operations manual, management personnel and positions, and an approved pilot training program. However, OpSpec A005 must list other appropriate regulatory sections from which the operator is authorized deviations.

**OPSPEC A041, PRETAKEOFF CONTAMINATION CHECK OR APPROVED ALTERNATE GROUND DEICING/ANTI-ICING PROCEDURE FOR TITLE 14 CFR PART 125/135 AIRPLANE OPERATIONS.**

**A. Part 125, § 125.221 and Part 135, § 135.227.** These sections require part 125 and 135 certificate holders who operate in ground icing conditions to have approved aircraft pretakeoff contamination check procedures or an approved alternate ground deicing/anti-icing procedure to determine the airplane is free of frost, ice, or snow. Principal inspectors (PI) will issue OpSpec A041 to authorize a pretakeoff contamination check (not necessarily outside the aircraft) or the approved alternate procedure. A part 125 or 135 certificate holder may choose to comply with part 121, § 121.629(c) by having an approved ground deicing/anti-icing program, in which case the PI will issue OpSpec A023. See Volume 4, Chapter 8, Low Visibility Taxi Operations, for guidance on approving a ground deicing/anti icing program.

**B. OpSpec Paragraph A041.** This paragraph will be used to authorize the use of the alternative procedure using the services of a provider with an approved § 121.629 program and thereby authorizing the use of the holdover times (HOT) as limiting values instead of as advisory

information only. The conditions specified in this OpSpec must be complied with in order for the operator to use this alternate procedure. Before issuing the OpSpec the operator's General Operations Manual (GOM) and training program must be updated to include the elements contained in this guidance. The flightcrew, and, if appropriate, other ground personnel (example: persons charged with prearranging ground deicing services) must be trained as per the approved training program as updated to address the elements contained in this guidance. For an operator choosing to implement this alternate procedure, OpSpec A041 allows the operator to choose for each takeoff between conducting a pretakeoff contamination check in accordance with the Aircraft Flight Manual (AFM) or certificate holder's approved program within five minutes of takeoff, or, if authorized, and all the conditions of their approved alternate procedure and the OpSpec can be met, to use the holdover time/allowance times as limiting values. OpSpec A023 should not be issued for the purpose of authorizing this alternate procedure. This is an alternate procedure to conducting a pretakeoff contamination check and not in full compliance with the requirements of an approved § 121.629 program.

**C. Approved Alternate Ground Deicing/Anti-icing Procedure.** By providing this guidance for the development of an alternate ground deicing plan the FAA anticipates an improvement in the level of safety in winter operations by encouraging part 125 and 135 operators to develop aircraft ground de/anti-icing plans similar to an approved § 121.629 program. By incorporating the procedures outlined in this guidance and by incorporating and conducting the training specified, the operator will have available for use quality assured de/anti-icing fluids, applied with equipment meeting the proper specifications, and applied by qualified ground personnel under the quality assurances built into a § 121.629 approved ground deicing program. An operator under part 125 or 135 may choose to implement the alternate procedures for ground de/anti-icing as outlined in this guidance or continue to operate in ground icing conditions by conducting a pretakeoff contamination check within five minutes of takeoff using procedures in their approved ground deicing plan, and AFM limitations. Under these alternate procedure guidelines the operator is restricted to using the ground deicing services of an air carrier or an air carrier contract service provider conducting ground deicing service under an approved § 121.629 ground deicing program. Since the quality control requirements for the fluids and application equipment along with the activation of the program/plan as it relates to the ground service readiness is under the control of the holder of the § 121.629 approved program, the operator under these alternate procedures need not have policies and procedures for these elements in their alternate plan. Likewise, all ground deicing personnel are required to have been trained and qualified by the holder of the § 121.629 approved program being used, therefore the holder of these alternate ground deicing procedures must conduct only aircraft-specific training. In lieu of prior training of the ground deicing personnel on the specific aircraft, the flightcrew may, in person, supervise the de-/anti-icing process. This supervision must be supplemented by pictorial description (provided to the application personnel) of the aircrafts critical and sensitive surfaces indicating those areas that must be checked as part of the post deicing and anti-icing inspections. In order to use this flightcrew supervision provision the flightcrew must be trained on all fluid application procedure requirements except for actual hands on practice. In essence, the operator's ground de/anti-icing alternate procedures plan must contain all other elements of an approved § 121.629 program as detailed in the current edition of AC 120-60, Ground Deicing and Anti-icing Program, except as indicated above. The required elements of the operator's alternate procedure plan and required training is provided below. This guidance is extracted from

AC 120-60 with limited additional guidance from other FAA ground deicing guidance material. In addition, inspectors and certificate holders should consult the AFS-200 Web site for current guidance.

**1) Required Ground De/Anti-Icing Elements.** This paragraph describes ground de/anti-icing elements required to be contained in a part 125 and 135 alternate procedures in-lieu of a pretakeoff contamination check in order to be authorized the use of the current FAA-published fluid HOT as limiting time values rather than advisory times when utilizing the ground de/anti-icing service provider with an approved part 121, § 121.629 program.

a) Management Plan. In order to properly exercise operational control (when conditions are such that frost, ice, snow, or slush may reasonably be expected to adhere to an aircraft), the certificate holder should develop, coordinate with other affected parties, implement, and use a management plan for proper execution of its alternative de/anti-icing plan. A plan encompassing the following elements is acceptable:

1. Responsibility. Where operations are expected to be conducted in conditions conducive to ground icing, determine who is responsible for deciding when ground deicing/anti-icing procedures are in effect and the ambient conditions for implementing ground deicing procedures.

2. Manuals Requirements. The certificate holder should incorporate a detailed description of the deicing/anti-icing plan in its manuals for flightcrew members, flight followers, ground operations personnel, and management personnel to use when conducting operations under ground icing conditions. This description should include the functions, duties, responsibilities, instructions, and procedures to be used.

3. Coordination. The certificate holder should develop a winter operations plan to include procedures for coordination with the deicing service provider, air traffic control (ATC), and airport authorities as appropriate.

b) De/Anti-icing Fluid Application Procedures. In an appropriate manual, certificate holders must specify the deicing and anti-icing fluid procedures for each type of aircraft operated. Thickened anti-icing fluids (Type II, III, and IV), may only be used on aircraft that the aircraft manufacturer has provided documentation that these fluids are safe to be used on that make and model aircraft. Type I deicing fluid may be used on any aircraft with a takeoff rotation speed of 65 knots or greater with an outside air temperature of -19 C or warmer. In order to use the HOT as limiting time values the de/anti-icing service must be provided by an operator with an approved de/anti-icing program approved under § 121.629 or a contract provider to that operator under the operators approved § 121.629 approved program. Ground personnel trained and qualified to apply deicing and anti-icing fluid, in accordance with a certificate holder's approved § 121.629 program, do not require additional training and qualification to deice and anti-ice similar aircraft operated by another certificate holder. If the deicing service provider has been trained by another part 125 or 135 air carrier using an alternate deicing procedures in accordance with this guidance for the same type of aircraft additional training under the provisions of this guidance is not required. However, specific training and/or direct flightcrew supervision, supplemented with pictorial descriptions of the de/anti-icing procedures to be used

identifying the critical aircraft surfaces, sensitive areas, and areas to be checked in the post deicing and post anti-icing inspections is needed for deicing personnel to deice different types of aircraft or aircraft with different configurations.

c) **HOT Tables and Procedures for Their Use.** The operator's alternate ground de/anti-icing procedures must include HOT tables and the procedures for the use of these tables by the certificate holder's personnel. The following elements must be included in the operator's alternate plan:

1. **Responsibilities and Procedures.** The certificate holder's program must define operational responsibilities and contain procedures for the flightcrew, ground personnel, and maintenance personnel that apply to the use of HOTs and resultant actions if the determined HOT is exceeded.

i. Procedures to address deicing operations at specific deicing locations (e.g., gate, remote, or centralized facilities, engines running/not running, auxiliary power unit (APU), etc.), including how to determine radio frequencies to be utilized for communications between the flightcrew and the ground personnel.

ii. Procedures for ground crew and flightcrew to communicate:

- During aircraft positioning, (if required),
- Other pertinent information regarding the deicing/anti-icing process,
- Start of the HOT (start time of final fluid application),
- The aircraft departure process from the deicing area, and
- Equipment clear/job done (post de/anti-icing inspections completed)—safe to start taxiing.

iii. In addition, procedures must be developed for the flightcrew's use of the pertinent HOT tables, coordination with flight followers and ATC as appropriate.

2. **FAA HOT Tables.** An operator's alternate procedure must implement HOT tables for use by its personnel. The FAA develops HOT tables for Type I deice/anti-ice fluid and manufacturer specific and generic Type II, III, and IV anti-ice fluid in accordance with SAE ARP 4737, Aircraft Deicing/Anti-Icing Methods, and ISO 11076, Aerospace Aircraft Deicing/Anti-Icing Methods with Fluids. HOTs that exceed those specified in the current edition of the FAA specific HOT of approved fluids are not acceptable. However, the certificate holder may require the use of more conservative times than those specified in the FAA tables.

3. **Use of HOT Tables.** HOT ranges are an estimate of the time that deicing/anti-icing fluid will prevent the formation of frost or ice and the accumulation of snow on the unprotected surfaces of an aircraft. HOT begins when the start of the final application of deicing/anti-icing fluid commences and expires when the deicing/anti-icing fluid applied to the aircraft loses its effectiveness (e.g., when ice begins to form on or in the fluid). HOTs vary with weather conditions. The effectiveness of deicing/anti-icing fluids is based on a number of variables (e.g., temperature, moisture content of the precipitation, wind, and the aircraft skin

temperature). The HOT tables are to be used for departure planning and in conjunction with pretakeoff check procedures.

d) Frozen Contaminants on the Aircraft. The operators must have procedures that insure the aircraft is free of all frozen contaminants adhering to the wings, control surfaces, propellers, engine inlets, or other critical surfaces before takeoff.

1. Identification of Critical Aircraft Surfaces. The critical aircraft surfaces, which must be clear of contaminants before takeoff should be described in the aircraft manufacturer's maintenance manual or other manufacturer-developed documents, such as service or operations bulletins.

i. Generally, the following should be considered to be critical aircraft surfaces, if the aircraft manufacturer's information is not available:

- Pitot heads, static ports, ram-air intakes for engine control and flight instruments, other kinds of instrument sensor pickup points, fuel vents, propellers, and engine inlets. These are both critical areas for flight safety and classified as sensitive surfaces because they may be adversely affected by direct de/anti-icing fluid application and therefore require special attention during cold weather preflight and fluid application.
- Wings, empennage, and control surfaces.
- Fuselage upper surfaces on aircraft with center mounted engine(s).

ii. Certificate holders must list in the general operations manual, for each type of aircraft used in their operations, the critical and sensitive surfaces that should be checked on flight-crewmember preflight inspections, pretakeoff checks, and pretakeoff contamination checks.

iii. Critical surfaces must be defined for the use of ground personnel for conducting the check following the deicing/anti-icing process and for any pretakeoff contamination checks that may be accomplished by ground personnel.

2. Identification of Representative Aircraft Surfaces (if used in place of critical surfaces). Representative aircraft surfaces are for use in conducting pretakeoff checks only; this is not to be confused with pretakeoff contamination check requirements. For each type of aircraft operated, certificate holders should list, in the general operations manual, the representative surfaces that may be checked while conducting pretakeoff checks. Some aircraft manufacturers have identified certain aircraft surfaces that the flightcrew can readily observe to determine whether or not frozen contaminants are accumulating or forming on that surface and, by using it as a representative surface, can make a reasoned judgment regarding whether or not frozen contaminants are adhering to other aircraft surfaces. When identifying a representative aircraft surface, the following guidelines should be considered:

i. The surface can be seen clearly to determine whether or not frozen contaminants are forming or accumulating on the surface and if the estimated HOT is valid considering the precipitation conditions actually present.

ii. The surface must be unheated.

iii. If using a treated surface during the deicing/anti-icing procedure, the representative surface should be one of the first surfaces treated with deicing/anti-icing fluid. However, the designation of representative surfaces is not limited to treated surfaces.

3. Recognition Techniques. Certificate holders must have aircraft specific guidance for the recognition of contamination on aircraft surfaces. The flightcrew and other personnel should use these type-specific techniques while conducting preflight aircraft icing checks, pretakeoff checks, and pretakeoff contamination checks. Frozen contaminants can take the form of ice, frost, snow, or slush. Initial, Transition, Recurrent, Upgrade, or Advanced Qualification Program and Continuing Qualification training curricula should include aircraft type-specific techniques for use by the flightcrew and other personnel for recognizing contamination on aircraft surfaces. The flightcrew and other personnel should use these type-specific techniques while conducting preflight aircraft icing checks, pretakeoff checks, and pretakeoff contamination checks. Frozen contaminants can take the form of ice, frost, snow, or slush. The formation of clear ice may be difficult to detect visually. Therefore, specific techniques for identification of clear ice should be included.

e) Types of Icing Checks. The operator's alternate ground deicing/anti-icing plan must include procedures for pretakeoff and pretakeoff contamination checks that, when applicable, are required to be accomplished. The aircraft deicing/anti-icing procedure must also include a post deicing/anti icing check of all aircraft critical surfaces.

1. Pretakeoff Check (within the HOT, not to be confused with a pretakeoff contamination check that is applied after the expiration of the HOT). This check is required anytime HOT are used. The flightcrew must accomplish the check within the HOT. The flightcrew should check the aircraft's wings or representative aircraft surfaces for frozen contamination. The surfaces to be checked are determined by manufacturer's data or guidance contained in AC 120-60, current edition. The pretakeoff check is integral to the use of HOTs. Because of the limitations and cautions associated with the use of HOTs, the flightcrew must assess the current weather and other situational conditions that affect the aircraft's condition and not rely on the use of HOTs as the sole determinant that the aircraft is free of contaminants. Several pretakeoff checks may be required during the HOT period based on factors that include the length of the HOT range, weather, or other conditions. The flightcrew must maintain a continued awareness of the condition of the aircraft and accomplish, as a minimum, a pretakeoff check just before taking the active runway for departure. When conducting the pretakeoff check, the flightcrew must factor in the application sequence (i.e., where on the aircraft the de/anti-icing process began).

2. Pretakeoff Contamination Check (when HOT has been exceeded).  
Completing a pretakeoff contamination check is one of the conditions that allows a takeoff after a HOT has been exceeded. When a HOT has been exceeded, certificate holders must have

appropriate pretakeoff contamination check procedures for the flightcrew's and/or other qualified ground personnel's use to ensure that the aircraft's critical surfaces remain free of frozen contaminants. Flightcrews and/or other qualified ground personnel must complete the pretakeoff contamination check within 5 minutes before beginning takeoff. This check must be accomplished from outside the aircraft unless the certificate holder's program specifies otherwise. If any doubt exists concerning the aircraft's condition after completing this check, the aircraft cannot takeoff unless it is deiced again and a new HOT is determined. The following should be considered while developing procedures for this check:

i. For all hard wing aircraft (those without leading edge devices) this check must be an outside the aircraft tactile check (feel). For all high wing aircraft this check must also be an outside the aircraft check and maybe visual or tactile based on the aircraft manufacturers procedures or as approved by the FAA. Also aircraft with aft, fuselage-mounted, turbine-powered engines must conduct pretakeoff contamination checks from outside the airplane.

ii. Operators of aircraft other than those addressed in paragraph a) above, should conduct this check from outside the aircraft unless they can show that the check can be adequately accomplished from inside the aircraft. The operators plan must detail procedures and requirements for this check. When developing a procedure—not described in the AFM—for conducting the pretakeoff contamination check from inside the aircraft, certificate holders should consider if crewmembers are able to see enough of the wings, control surfaces, and other surfaces to determine whether or not they are free of contaminants. When making this determination, consider the aircraft type, the method of conducting the check (from the cockpit or cabin), and other factors, such as aircraft lighting and ambient conditions.

3. Post-Deicing/Anti-Icing Check. The operator must have procedures outlining these check procedure for each aircraft. This multi-part check is an integral part of the deicing/anti-icing process. The check ensures that:

i. All critical surfaces are free of adhering frozen contaminants after deicing.

ii. If anti-icing fluid is to be applied it assures that all critical surfaces are free of frozen contaminants before the application of any anti-icing fluid.

iii. All critical surfaces are free of frozen contaminants before pushback or taxi. And if anti-icing fluid has been applied that all critical surface have been treated with an even coating of the applicable fluid.

NOTE: Certificate holders must have procedures that require that qualified ground personnel or flightcrew personnel conduct this check. If conducted by qualified ground personnel, certificate holders should establish communication procedures to relay pertinent deicing/anti-icing information and the results of this check to the pilot in command (PIC).

f) Communications. The operator must have standardized communication procedures for communications between the flightcrew and ground deicing personnel. Communication between ground personnel and the flightcrew before commencing deicing/anti-icing operations is critical. Upon completion of deicing/anti-icing operations, ground personnel should communicate with the flightcrew to determine the start time of the final fluid application procedure and therefore the start of the HOT. The particular HOT the flightcrew uses is extremely critical. Because many deicers service multiple carriers, the FAA recommends that all operators include the following flow sequence and information to provide standardization:

1. Before commencing deicing/anti-icing operations, ground personnel and the flightcrew should review the following (as applicable):

- i. Deicing/anti-icing prior to crew arrival.
- ii. Gate or remote deicing/anti-icing procedures.
- iii. Aircraft-specific procedures.
- iv. Communications between ground personnel and the flightcrew.

2. Just before commencing the application of deicing/anti-icing fluid, ground personnel should confirm with the flightcrew that the aircraft is properly configured for deicing, as the following example states: “N90FAA, is your aircraft ready for deicing/anti-icing?” Response from N90FAA, “Learjet N90FAA, parking brake is set, engines are running, APU is off, aircraft is configured for deicing, and anti-icing with Type IV fluid.” Response from deicing crew, “Roger N90FAA commencing deicing.”

3. Upon completion of deicing/anti-icing, the flightcrew must be provided the following elements:

- i. Fluid type (e.g., Type I, Type II, Type III or Type IV), the fluid product name is optional for each type of fluid if the fluid meets product on-wing viscosity requirements.
- ii. Fluid/water mix ratio by volume of Types II, III, and IV.  
(Reporting the concentration of Type I fluid is not required.)
- iii. Specify, in local time (hours and minutes) the beginning of the final fluid application (e.g., 1330).
- iv. Post application check accomplished. Specify date  
(day, written month, year).

NOTE: The element listed in subparagraph 3d is required for recordkeeping; it is optional for crew notification.

NOTE: Transmission of elements listed in subparagraphs a through c, to the flightcrew, confirms that a post deicing/anti-icing check was completed and the aircraft is clean.

4. Below are two examples of the ground/flightcrew communication sequence.

i. One Step Process with Type I or other approved deicing fluid:  
“N90FAA are you ready for your deicing report?” “N90FAA is ready to copy deicing report.”  
“N90FAA your aircraft has been deiced with Type I fluid. Your fluid application began at 1430.”

ii. Two Step Process with Types II, III, or IV: “N90FAA are you ready for your deicing report?” “N90FAA is ready to copy deicing report.” “N90FAA your aircraft has been deiced with Type I fluid and anti-iced with Type IV. An anti-ice fluid mixture of 75/25 was used. Your anti-ice fluid application began at 1645.”

**2) Training Requirements Required for the Authorization of the Alternate Procedures Allowing the Use of HOT as Limiting Values.** Training for flight followers is only required if that person plays a role in the planning, execution, or recording of aircraft ground de/anti-icing. Training for ground deicing personnel is only required if each de/anti-icing fluid application is not to be supervised by flightcrew personnel.

a) Initial/Recurrent Ground Training and Qualification. Only trained and qualified personnel may carry out deicing/anti-icing procedures. A flightcrew member trained on fluid application procedures for the applicable aircraft and operator may, in person, supervise the de/anti-icing of the aircraft in lieu of the fluid application personnel being trained on the specific aircraft, provided the application personnel have been appropriately trained and currently qualified under a § 121.629 approved program and the application personnel are provided pictorial diagrams indicating the critical and sensitive areas of the aircraft, and areas to be inspected as part of the post deicing and post anti-icing inspection, and instructed on the proper methods for treatment of the critical and sensitive areas.

1. Each certificate holder’s approved program must consist of the following:

i. Certificate holders must conduct initial and annual recurrent training for flightcrews, and, as applicable, flight followers, and ground personnel and must ensure that all such crews obtain and retain a thorough knowledge of aircraft ground deicing/anti-icing policies and procedures, including required procedures and lessons learned.

ii. Flightcrew, and, as applicable, flight follower, and ground personnel training programs must include a detailed description of initial and annual recurrent ground training and qualification concerning the specific requirements of the alternate plan and the duties, responsibilities, and functions detailed in the plan.

iii. Flightcrew, and, as applicable, flight follower, and ground personnel training programs must have a Quality Assurance Program to monitor and maintain a high level

of competence. An ongoing review plan is advisable to evaluate the effectiveness of the deicing/anti-icing training received.

iv. The program must have a tracking system that records all required personnel have been satisfactorily trained. Certificate holders must maintain records of personnel training and qualification for proof of qualification.

v. Personnel must be able to adequately read, speak, and understand English in order to follow written and oral procedures applicable to the deicing/anti-icing program.

2. Certificate holders must train and qualify flightcrew, and as applicable flight followers, and ground personnel on at least the following subjects, identified as All personnel (no identification) Flightcrew (F), Flight Followers (FF) (persons charged with pre-arranging of ground deicing services), if applicable to the operators operation, or Ground Personnel (G) if applicable, all pilots that supervise the application of de/anti-icing fluids need to be trained on the subjects for Ground personnel (G) except for hands on training of fluid application techniques:

i. Effects of Frozen Contaminants on Aircraft Surfaces. Provide an understanding of the critical effect the presence of minute amounts of frost, ice, or snow has on flight surfaces. This discussion should include, but is not limited to:

- Loss of lift (F),
- Increased drag and weight (F),
- Decreased control (F),
- Tendency for rapid pitch-up and roll-off during rotation (F),
- Stall occurs at lower-than-normal angle of attack (F),
- Buffet or stall occurs before activation of stall warning (F),
- Aircraft specific areas: (F/G),
- Engine foreign object damage potential,
- Ram air intakes,
- Instrument pickup points,
- Leading edge device (LED) aircraft (aircraft that have slats or leading edge flaps) and non-LED aircraft,
- Airworthiness Directives (AD)/specific inspections, and
- Winglets.

ii. Aircraft Ground Icing Conditions. Describe conditions that cause implementation of deicing/anti-icing procedures (F).

- In-Flight Ice Accumulation. Certificate holders should have procedures for flightcrews on arriving flights to report occurrences of in-flight icing to the personnel responsible for executing the certificate holder's deicing/anti-icing program. In-flight ice accumulation could result in a ground-deicing situation when

flights are scheduled for short turnaround times (e.g., for 30 minutes or less and when ambient temperatures on the ground are at or below freezing).

- Frost, including hoarfrost (F).
- Freezing precipitation (snow, freezing rain, freezing drizzle, or hail, which could adhere to aircraft surfaces) (F).
- Freezing fog (F).
- Rain or high humidity on cold soaked wing (F).
- Rain or high humidity on cold soaked wing fuel tanks (F).
- Under-wing frost (may not require deicing/anti-icing within certain limits) (F/G).
- Fluid failure identification (F/G).

iii. Location specific deicing/anti-icing procedures (F/G, as appropriate).

iv. Communications procedures between the flightcrew, ground personnel, ATC, and company station personnel (F/FF/G).

NOTE: Communication procedures must include ground crew confirmation to the flightcrew after the deicing and anti-icing process is completed that all personnel and equipment are clear before reconfiguring or moving the aircraft.

v. Means for obtaining most current weather information (F/FF).

vi. Characteristics and capabilities of fluids used (F/D/G).

- General fluid descriptions (F/G),
- Composition and appearance (F/G),
- Differences between Type I and Type II/IV deicing/anti-icing fluids(F/G),
- Purpose for each type (F/G),
- Deicing fluids (F/G),
- Anti-icing fluids (F/G),
- De/anti-icing fluids capabilities (F/G),
- Approved deicing/anti-icing fluids for use (SAE, ISO, etc.) (F/G),
- Fluid-specific information provided by fluid or aircraft manufacturer (F/G),
- Fluid temperature requirements (hot vs. cold) (F/G),
- Properties associated with infrared deicing/anti-icing (F/G),
- Health, safety, and first aid (F/G),
- Environmental considerations (G),
- Fluid selection (F/G), and
- Unusual flying qualities, such as the need for additional takeoff rotation stick-force (F).

## vii. Methods/Procedures (F/G).

- Inspection of critical surfaces,
- Clear ice precautions,
- Flightcrew/groundcrew preflight check requirement,
- Deicing/anti-ice determination,
- Deicing/anti-ice location,
- Communication before deicing/anti-icing,
- General deicing/anti-ice precautions,
- Aircraft specific requirements,
- Deicing:
- Requirements,
- Effective removal of frost, snow, and ice.
- Anti-icing:
- Requirements
- Preventative anti-icing,
- Application,
- Deicing/anti-icing:
- One step,
- Two step,
- Guidelines for the application of deicing/anti-icing fluids,
- Post deicing/anti-icing checks requirement,
- Flight control check, and
- Communications after deicing/anti-icing.

## viii. Use of HOTs (F/G).

- Definition of HOT;
- When HOT begins and ends;
- Limitations and cautions associated with the use of HOTs;
- Source of HOT data;
- Relationship of HOT to particular fluid concentrations and for different types of fluids;
- Precipitation category (e.g., fog, drizzle, rain, or snow);
- Precipitation intensity;
- How to determine a specific HOT from the HOT range that accounts for moderate or light weather conditions; and
- Adjusting HOT for changing weather conditions.

ix. Pretakeoff Check Requirement (F/G). Identification of representative surfaces.

x. Pretakeoff Contamination Check Requirement (F/G).  
Communications.

## xi. Aircraft Surface Contamination Recognition (F/G).

**3) Confirmation of Service Provider Qualification.** The operator must have procedures for the flightcrew to determine that ground de/anti-icing service providers are providing their service under a current approved § 121.629 aircraft ground deicing program. These procedures must include a regular check, by the operator, to ensure the currency of the service providers continued approval status under § 121.629. The flightcrew instructions must be clear that if the service provider's approval under § 121.629 cannot be assured that the HOT tables revert to being advisory information only and a pretakeoff contamination check per the applicable procedures must be performed.

**4) Recording Requirements.** The operator's plan must include procedures for the recording of the location that de/anti-icing was performed, the name of the provider, the type of fluid and mixture used, the final fluid application start time, and the takeoff time. This record may be included as part of an existing record requirement (example: aircraft discrepancy log). This record must be retained and made available to the FAA upon request for a period of at least 12 calendar-months.

**OPSPEC A042, TITLE 14 CFR PART 125/135 AIRPLANE OPERATIONS WITHOUT A DEICING/ANTI ICING PROCEDURE WHEN GROUND ICING CONDITIONS DO NOT EXIST.** If a part 125 or 135 operator chooses to operate without a pre takeoff contamination check as required by part 125, § 125.221 and part 135, § 135.227, or without a part 121, § 121.629(c) program, then principal inspectors may only authorize them to operate when ground icing conditions do not exist by issuing OpSpec A042. See Volume 3, Chapter 27, Ground Deicing/Anti-Icing Programs, for guidance on approving a ground deicing/anti icing program.

**MSPEC A043, AFFILIATE PROGRAM MANAGERS.** MSpec A043 allows fractional owners to use program aircraft operated by the program manager's affiliate's program. The program manager certifies to the Administrator that the affiliate program manager listed in MSpec A043 meets the requirements of part 91 subpart K.

**OPSPEC A044, (PART 133 DATABASE ONLY) CLASS D OPERATIONS INVOLVING CARRIAGE OF PERSONS. (TBD)**

**OPSPEC A045, SUBSTITUTE SCHEDULED SERVICE AS A SUPPLEMENTAL OPERATOR. (TBD)**

**OPSPEC A046, SINGLE-ENGINE IFR PASSENGER CARRYING OPERATIONS UNDER 14 CFR PART 135.** A046 is issued to authorize single-engine instrument flight rules (SEIFR) passenger-carrying operations under part 135. Additional Maintenance Requirements OpSpec paragraphs D100–104, must be issued as applicable. The operator must meet the conditions part 135, § 135.163 and other appropriate sections, to be issued the authority to operate under IFR with passengers or a combination of passengers and cargo. A046 provides the operational limitations and provisions necessary to operate under IFR while carrying passengers in a single-engine aircraft. The principal operations inspector, principal maintenance inspector, and principal avionics inspector must coordinate the issuance of A046 and the applicable Part D

paragraphs (by the authority of 119, § 119.51(b)). Once the operator has met the requirements to conduct SEIFR operations, all the applicable OpSpec paragraphs must be issued for SEIFR authorization.

### **OPSPEC/MSPEC A047, REPLACED BY OPSPEC A447.**

### **OPSPEC A048, FLIGHT DECK ACCESS AUTHORIZATION PROCEDURES.**

**A. General.** Operations specification (OpSpec) A048 is provided for a 14 CFR part 119 certificate holder that elects to have an approved program to allow persons eligible under part 121, § 121.547(a)(3) access to the flight deck using the Cockpit Access Security System (CASS) program and/or the Flight Standards Service (AFS) Flight Deck Access Restriction (FDAR) program in accordance with the limitations and provisions of the OpSpec. It is important to note that the Transportation Security Administration (TSA) may restrict flight deck access through the issuance of Security Directives (SD). The TSA also evaluates and approves (or denies) use of any system that is used to vet persons requesting flight deck access, such as CASS.

**B. CASS Participation.** CASS is a voluntary program. It is acceptable if an individual operator does not elect to participate. If they do decide to use the CASS, they must meet all of its criteria.

1) An airman certificate is not specifically required for CASS, as not all persons eligible for flight deck access need one (e.g., flight followers).

2) CASS is not an FAA program. However, it is available to air carriers for use in determining identification and eligibility of individuals seeking access to flight deck jump seats. CASS accommodates most positions that are eligible for flight deck access, such as flightcrew members and flight followers. An air carrier should contact ARINC's CASS representative directly with questions about program accommodation for specific position(s) that are eligible for flight deck access.

3) If the Director of Operations (DO) elects to delegate the task of auditing the database, the DO retains full responsibility for its accuracy, completeness, currency, etc.

**C. Background.** In the past, the TSA, industry, and FAA agreed upon the use of a valid passport when using this system.

1) Since that agreement, technology has advanced to the point that an individual's photograph is now a required element of that person's electronic record in the CASS system.

2) A passport is no longer specifically required for CASS participation.

3) TSA has issued a SD that requires an air carrier to include digitized pictures of persons participating in CASS before that air carrier is approved for participation by the TSA.

4) Also, as the guidance states, TSA may impose further restrictions on flight deck access through issuance of SDs.

**D. Table 3-6D, Operations Specification A048 Manual Procedures Checklist.** The checklist in Table 3-6D should be used to ensure the part 119 certificate holder's manual procedures for the required verification and access procedures for accessing the flight deck jump seat meets requirements. The appropriate sections of this checklist should be completed by the operator and provided to that operator's FAA principal operations inspector (POI) along with their request for amendment of their OpSpecs to include OpSpec A048.

1) The certificate holder may elect to include procedures for one or both of the following verification programs in its manual procedures:

a) CASS.

b) FDAR.

2) The checklist should be completed using the following methodology:

a) Number (item and sub item number).

b) Item description (provide a description of the item).

c) Response (circle "Yes" or "No" to indicate whether or not the item is adequately addressed in the program).

d) Manual page reference (enter the manual page number where the item is addressed).

**Table 3-6D. Operations Specification A048 Manual Procedures Checklist**

| NO.    | ITEM DESCRIPTION   | RESPONSE | MANUAL PAGE REFERENCE |
|--------|--|----------|-----------------------|
| 1.     | Do the certificate holder's procedures include a requirement to obtain the requester's employer-issued photo identification card?  | Yes/No   |                       |
| 2.     | Does the certificate holder's procedures include a requirement to verify at the time of check-in the information obtained from the person requesting flight deck jump seat access using one of the following methods (the certificate holder may select one or more of the following methods):                     |          |                       |
| 2.a.   | CASS?  | Yes/No   |                       |
| 2.b.   | FDAR - Electronic Database?  | Yes/No   |                       |
| 2.c.   | FDAR - Telephone?  | Yes/No   |                       |
| 2.c-i. | <i>If yes</i> , do the certificate holder's procedures contain a list of part 119 certificate holders with which flight deck jump seat agreements are in place and the respective contact numbers and/or email addresses for use in employee flight deck jump seat eligibility and employment status verification? | Yes/No   |                       |
| 2.d.   | FDAR - Email?  | Yes/No   |                       |
| 2.d-i. | <i>If yes</i> , do the certificate holder's procedures contain a list of part 119 certificate holders with which flight deck jump seat agreements are in place and the respective contact numbers and/or email addresses for use in employee flight deck jump seat eligibility and employment status verification? | Yes/No   |                       |
| 2.e.   | FDAR - Facsimile?  | Yes/No   |                       |
| 2.e-i. | <i>If yes</i> , do the certificate holder's procedures contain a list of part 119 certificate holders with which flight deck jump seat agreements are in place and the respective contact numbers and/or email addresses for use in employee flight deck jump seat eligibility and employment status verification? | Yes/No   |                       |

| NO.  | ITEM DESCRIPTION   | RESPONSE | MANUAL PAGE REFERENCE |
|------|--|----------|-----------------------|
| 3.   | Does the certificate holder's procedures assign responsibility to the Director of Operations for:  |          |                       |
| 3.a. | Completion of an initial audit to confirm accuracy of employee records used under this operations specification authorization?   | Yes/No   |                       |
| 3.b. | Completion of recurring audits to confirm accuracy of employee records used under this operations specification authorization at least once every 12 months?             | Yes/No   |                       |
| 3.c. | Updating any and all employee status changes of the employee records used in accordance with this authorization within 12 hours of the time that the change(s) occurred? | Yes/No   |                       |
| 4.a. | Has the certificate holder satisfactorily demonstrated their software and procedures to the principal operations inspector?  | Yes/No   | N/A                   |
| 4.b. | Did the demonstration reveal any instances where flight deck jump seat access was granted when it should have been denied?   | Yes/No   | N/A                   |
| 5.   | Did the initial audit (see item 3.a. above) reveal any records representing former employees as current employees?   | Yes/No   | N/A                   |
| 6.   | Is the certificate holder in receipt of an applicable TSA authorization to use a vetting system for persons requesting flight deck access (e.g., CASS)?                  | Yes/No   |                       |

**OPSPEC/MSPEC A049, REPLACED BY OPSPEC/MSPEC A449.**

**LOA A049, LETTER OF AUTHORIZATION FOR COMMERCIAL AIR TOUR OPERATIONS AND ANTIDRUG AND ALCOHOL MISUSE PREVENTION PROGRAM REGISTRATION.**

**A. Applicability.** LOA A049 applies to part 91 operators and part 119 certificate holders operating under part 121 or part 135 who conduct commercial air tour operations for compensation or hire under § 91.147.

1) If a part 91 operator is not already identified in OPSS, general instructions for putting an operator into the OPSS, in order to issue the automated part 91 LOA A049 is associated with all OpSpec/MSpec A001 templates in the part 91 database of the OPSS. If you need further assistance, please contact Aviation Safety (AVS) Support Central at 405-954-7272.

a) Because of programmatic limitations, we are unable to provide any other title than POI, PMI, or PAI for the signature block in the OPSS for part 91 LOAs. Thus, the office manager or applicable supervisor who chooses to sign the part 91 authorizations will be identified as a POI, PMI, or PAI instead of manager or supervisor.

b) When issuing a part 91 authorization from the OPSS, at a minimum the A001, Issuance and Applicability; and A004, Summary of Special Authorizations and Limitations templates must be included in the operator's package.

2) Operators who are uncomfortable with the limitations in § 91.146 and wish to continue flights supporting charities, nonprofit organizations, and community events may also use § 91.147 and must be issued A049. Part 91 operators using § 91.147 also have the option of becoming certificated operators in order to conduct commercial air tour operations under part 135 or part 121.

**B. Air Carriers Operating Under Section 91.147.** Part 121 or 135 certificate holders that conduct commercial air tour operations under § 91.147 must be issued a separate LOA from the part 91 database and issued a separate four character identifier. Certificate holders must implement a second drug and alcohol testing program to conduct operations under § 91.147. Even though the same company may be conducting operations under part 135 or 121 and air tour operations under § 91.147, the FAA's regulations consider the two operations to be separate entities for drug and alcohol purposes.

**C. Commercial Air Tours (defined in 14 CFR part 136, § 136.1).** These operations are passenger-carrying flights conducted in accordance with § 91.147. As of September 11, 2007, all operators or certificate holders must have applied for and have been operating in accordance with LOA A049, issued by the FSDO nearest to its principal place of business. The seven items listed in § 91.147(c) represent the minimum amount of information required for the national database and the issuance of LOA A049 to the part 91 operators. Certificate holders comply with most of these requirements through the issuance of other applicable OpSpecs:

- 1) Name of operator, agent, and any DBA under which that operator does business (template/OpSpec A001);
- 2) Principal business address and mailing address (template/OpSpec A001);
- 3) Principal place of business (if different from business address) (template/OpSpec A001);
- 4) Name of person responsible for management of the business (LOA A049);

- 5) Name of person responsible for aircraft maintenance (LOA A049);
- 6) Type of aircraft, registration numbers(s), and make/model/series (LOA A049);

and

7) A copy of the Antidrug and Alcohol Misuse Prevention Program registration (LOA A049). This information will be used to populate Table 3 (Location of Records for Inspection) in LOA A049. The population of this table “activates/registers” the drug abatement program for future inspection by AAM-800.

NOTE: The operator must implement its drug and alcohol testing programs in accordance with part 121 appendices I and J.

**D. Special Agreements.** Some operators may have agreements with other parts of the FAA, such as air traffic, directly or through outside industry associations to conduct flights in a certain way or airspace. These special agreements need to be documented in the LOA A049. The documentation of these agreements in LOA A049 does not imply nor require that the agreements are approved by the Flight Standards PI.

NOTE: Section 136.3 now allows amendment and reconsideration of LOAs through § 119.51.

**E. Hawaiian Air Tour Operators.** The Hawaii air tour operators conducting these commercial air tour operations under § 91.147 must be issued LOA A049. The Hawaiian air tour operators may be issued a deviation (previously under SFAR 71) using LOA/OpSpec B048. The deviation authorizes the operator/certificate holder to conduct § 91.147 commercial air tour operations below an altitude of 1,500 feet above the surface in accordance with the appropriate requirements of part 136 and part 136 appendix A, and the limitations and provisions of B048.

**F. Air Tour Operations Under § 91.147 and § 136.37.** The requirements of § 91.147 and those of § 136.37 are two separate requirements. Some commercial air tour operators conduct overflights of national parks and fall under the exception in § 136.37. OpSpec/LOA B057 is required for national parks and is issued in addition to LOA A049. OpSpec/LOA B057 authorizes a certificate holder or operator to conduct commercial air tour operations over national park(s) and tribal lands within or abutting the national park in accordance with part 136. See OpSpec/LOA B057 for guidance regarding air tour operations under § 136.37.

**G. The National Air Tour Safety Standards Final Rule (72 FR 6911).** Final Rule 72 FR 6911 published on February 13, 2007, and effective March 15, 2007, set safety and oversight rules for a broad variety of sightseeing and commercial air tour flights with changes in parts 61, 91, 119, 121, 135, and 136. Intended effects of this rule are to identify the air tour operators in a national database, standardize requirements for commercial air tour operators, and consolidate air tour safety standards within part 136. The rule change responded to NTSB recommendations, Government Accountability Office (GAO) reports, and DOT General Reports that recommend better oversight of the sightseeing (commercial air tour) industry. The preamble and final rule are

posted on the DOT Web site at URL:

<http://dms.dot.gov/search/document.cfm?documentid=452251&docketid=4521>.

NOTE: Exemptions to this rule are outlined in § 91.146.

**OPSPEC A050, HELICOPTER NIGHT VISION GOGGLE OPERATIONS (HNVGO). (TBD).**

**OPSPEC A051.** Reserved.

**OPSPEC/MSPEC/LOA A052.** Reserved.

**OPSPEC A053.** Reserved for Emergency Charter Operations. (TBD.)

**OPSPEC A054, (PART 133 DATABASE ONLY) INSTRUMENT FLIGHT RULES OPERATIONS (FOR PART 133, EXTERNAL LOAD OPERATIONS ONLY).**

(Guidance is found in Volume 2, Chapter 7, Initial Certification/Renewal of a Part 133 Operator.)

**OPSPEC A055, CARRIAGE OF HAZARDOUS MATERIALS.**

**A. Authorization.** Operations specification (OpSpec) A055 is an optional authorization applicable to certificate holders conducting operations under 14 CFR parts 121 or 135 that choose to comply with the applicable regulations to carry hazardous materials (hazmat).

**B. Regulatory Changes.** With the publication of Federal Register (FR) 58796, Vol. 70, No. 194, Friday, October 7, 2005, a change to part 119, § 119.49(a)(13) was effective November 7, 2005, as follows:

1) Section 119.49(a)(13) requires all certificate holders conducting operations under parts 121 or 135 to indicate in their operations specification that they “will-carry” or “will-not-carry” hazmat. OpSpec A055 is issued for those that “will-carry” hazmat. OpSpec A004 must contain the statement in subparagraph b that the certificate holder “will-not-carry” hazmat.

2) This FR also required that after February 7, 2007, these certificate holders must comply with the manual requirements of parts 121 and 135, §§ 121.135(b)(23) or 135.23(p) and with the hazmat training program requirements of §§ 121.1003 through 121.1007 or §§ 135.503 through 135.507, as applicable.

3) These changes align U.S. implementation with International Civil Aviation Organization (ICAO) standards for the carriage of hazmat, which recommend initial and biennial recurrent training programs. Additionally, ICAO recommends the certificate holder be specifically authorized by its state of authority to carry hazmat.

**C. Part 91 Subpart K (Part 91K) Program Managers and Part 125 Operators.**

There is no OpSpec A055 for part 125 operators or management specification (MSpec) A055 for part 91K. Section 91.1085 requires hazardous material (hazmat) recognition training. No

program manager may use any person to perform any assigned duty/responsibility for handling or carriage of hazmat unless that person has received training in the recognitions of hazmat.

1) Therefore, any program manager who delegates such an assignment would be a “hazmat employer” in accordance with Title 49 of the Code of Federal Regulations (49 CFR) part 172, § 172.702(d).

2) Any person so assigned, must be trained in accordance with § 172.704(a).

3) If the part 91K program manager makes a business decision not to accept hazmat and does not assign any person to perform a duty or responsibility to handle or carry hazmat, then recognition training is not required.

#### **D. Certificate Holders That Choose to Carry Hazmat (Will-Carry).**

1) A certificate holder conducting operations under part 121 or 135 that chooses to carry hazmat (and Company Materials (COMAT) identified as hazardous) must provide to its principal operations inspector (POI) a general outline of the aspects of the proposed training program as presented in Table 1, Operators That Transport Hazardous Material – Will-Carry Certificate Holders, of part 121, appendix O and the manual with the procedures and information to be used to assist the flightcrew members. The POI will forward this material to the appropriate regional hazmat branch manager’s office (see Volume 2, Chapter 2, Section 6 for references). Generally, air carriers must only submit an outline sufficient to provide an overview of the training program in regard to the aspects and functions covered in Tables 1 and 2, Operators That Do Not Transport Hazardous Materials – Will-Not-Carry Certificate Holders, of part 121 appendix O. The hazmat branch manager will review the submission to determine that it includes the relevant training aspects for the cited job functions.

2) Provided the following conditions are met, the certificate holder may be authorized to accept, handle, and transport materials, including COMAT (regulated as hazmat in transport under 49 CFR parts 171 through 180 (part 175 in particular)).

a) Packages containing hazmat are properly offered and accepted in compliance with parts 171 through 180;

b) Packages containing hazmat are properly handled, stored, packaged, loaded, and carried onboard the certificate holder’s aircraft in compliance with parts 171 through 180;

c) The requirements for the notification to the PIC (part 175, § 175.33) are complied with; and

d) Aircraft replacement parts, consumable materials or other items regulated by parts 171 through 180 are properly handled, packaged, and transported.

3) Additionally, for each crewmember and person performing or directly supervising the following job functions involving items for transport on an aircraft, the certificate holder’s manual required by §§ 121.133 or 135.21 shall contain those procedures and information necessary to assist the crewmember or other person in identifying packages marked or labeled as

containing hazmat or show signs of containing undeclared hazmat, including procedures and information on the following:

- Acceptance.
- Rejection.
- Handling.
- Storage incidental to transport.
- Packaging of company material.
- Loading.

4) The manual required by §§ 121.133 or 135.21, as appropriate, shall contain the certificate holder's procedures for rejecting packages that do not conform to the Hazardous Materials Regulations (HMR) in parts 171 through 180, or that appear to contain undeclared hazmat.

5) The manual required by §§ 121.133 or 135.21, as appropriate, shall contain the certificate holder's procedures for complying with the hazmat incident reporting requirements of part 171, §§ 171.15 and 171.16 and discrepancy reporting requirements of § 175.31.

6) The certificate holder is responsible for maintaining the records in initial and recurrent hazmat training within the three preceding years of all direct employees, contractors, and subcontractors directly supervising or performing an applicable job function as described in part 121 subpart Z for or on behalf of the certificate holder. The training records may be electronic or paper and must be made available to the FAA upon request at the location the trained person performs or directly supervises the covered job function.

7) The following recordkeeping requirements are identical to those required by § 172.700, the International Air Transport Association (IATA), and the International Civil Aviation Organization (ICAO):

- Individual's name.
- Most recent training completion date.
- A description, copy, or reference to training material.
- Name and address of organization providing training.
- Copy of certification used to show test was satisfactorily completed.

#### **E. Certificate Holders that Choose Not to Carry Hazmat (Will-Not-Carry).**

1) OpSpec A004 will state that the certificate holder conducting operations under part 121 or 135 is not authorized and shall not carry hazmat, satisfying the OpSpec regulatory requirement for a "will-not-carry" certificate holder. The certificate holder is prohibited from accepting, handling, or transporting those materials, including hazardous COMAT, regulated as hazmat in transport under parts 171 through 180.

2) Consistent with this prohibition, for each crewmember and person performing or directly supervising the acceptance, handling, storage incidental to transport, or loading of items for transport on an aircraft, the certificate holder's manual required by §§ 121.133 or 135.21 (as appropriate) shall contain those procedures and information necessary to assist the crewmember or other person in identifying packages that are marked or labeled as containing hazmat or that show signs of containing undeclared hazmat.

3) The manual required by §§ 121.133 or 135.21, as appropriate, shall contain the certificate holder's procedures for rejecting packages offered for transport that contain hazmat or that appear to contain undeclared hazmat.

#### **F. Basic, Single PIC, and Single-Pilot Operators.**

1) Operators issued OpSpecs A037 through A039 must have an approved hazmat program and should use the hazmat program currently accepted/approved by their respective regional hazardous material branch. These certificate holders conducting operations under part 135 will need to have OpSpec A055 issued if they are a "will-carry" certificate holder. These certificate holders may have to comply with the manual requirements for the carriage of hazmat if the hazardous material branch manager requires it.

2) Single-pilot operators issued OpSpec A040 may comply with the hazmat program by submitting a program for acceptance by the FAA if they are a "will-carry" certificate holder. They will be issued OpSpec A055 if they are a "will-carry" certificate holder. There is no manual requirement for a single-pilot operator issued OpSpec A040.

#### **G. Reference.**

- 70 FR 58796 (No. 194); October 7, 2005.

#### **OPSPEC/MSPEC/LOA A056, DATA LINK COMMUNICATIONS.**

NOTE: NextGen Tracking. Applications for approvals for this paragraph must be entered in the Regional NextGen Tracker as indicated in the General Procedures Section (Volume 3, Chapter 1, Section 1).

**A. General.** Template A056 contains specific operational limitations and provisions for granting authorization to operators of aircraft under part 91, 121, 125, 135, or 91 subpart K to conduct data link communications using aircraft systems that are certificated for air-ground air traffic services (ATS).

1) Parts 91, 121, 125, and 135 operators, and part 91K program managers conducting flight operations in oceanic and remote airspace may use data link communications systems (i.e., Future Air Navigation System (FANS) (FANS-1/A or equivalent)). Operations using data link communications within domestic airspace require very-high frequency (VHF) radios called very-high frequency digital link Mode 2 (VDL-2), compatible with ATS.

2) Data link may be used as a supplement to voice communications with ATS. Voice communications must be continually monitored because aircraft still must be equipped with operating VHF voice and, when required, high frequency (HF) voice radios along the entire flight route.

3) All data link operations in domestic airspace are limited to the en route phase of flight where radar or an equivalent surveillance system such as Automatic Dependence Surveillance-Broadcast (ADS-B) is available for surveillance services.

4) All aircraft used to conduct data link operations in domestic airspace must be equipped with an FAA-certified collision avoidance system that is on and operating. (Reference part 91, § 91.221; part 121, § 121.356; part 125, § 125.224; part 129, § 129.18; and part 135, § 135.180.)

5) An exception to the requirement for data link communication systems is the FANS-1/A system in oceanic or remote airspace. The FANS-1/A communications system can only be approved for data link operations in oceanic and remote area airspace. FANS-1/A systems are not interoperable with the VDL-2 infrastructure for domestic data link communications.

**B. Data Link Training.** Part 121 and 135 air carriers, and part 91K program managers must have an approved data link training program for their maintenance and flightcrew personnel, as outlined in FAA AC 120-70, Operational Authorization Process for use of Data Link Communication System, current edition.

**C. Authorization for Data Link Use.** For part 91, 121, 125, and 135 operators and part 91K program managers, the POI will coordinate with the principal avionics and PMIs on the following matters:

- 1) Equipment and systems certification, and airworthiness approval review;
- 2) The content of the OpSpec authorization;
- 3) The required communication performance;
- 4) The AFM;
- 5) Additional MEL requirements and relief; and
- 6) Other elements necessary for the safe and effective use of data link communications.

NOTE: POIs should be aware that there may be additional limitations and guidance for specific airplanes in Flight Standardization Board (FSB) reports.

**D. Contents of Operator Application for Operational Authorization to Use Data Link.** The operator's application to obtain authorization to use data link must address and contain the following subjects:

- 1) List of source documents used:
  - a) For generic data link operations (e.g., aircraft/avionics manufacturer documents).
  - b) For area of operations specific policy/procedures. (See item 3 below.)
- 2) Description of aircraft data link systems including certification documents and current configuration (e.g., current avionics load).
- 3) Data link system make/model/series. All STC and AFM limitations and procedures.
- 4) General information.
- 5) Areas of operation/routes where operator intends to use data link.
  - a) List of areas and/or routes where operator intends to conduct data link operations.
  - b) List of air traffic centers/service providers with which the operator intends to communicate via data link.
  - c) List of policy and procedures source documents applicable to each area(s) of operations, such as:
    1. Operations manuals for specific areas of operations (e.g., FANS-1/A Operations Manual (FOM) for operation in Asia-Pacific flight information regions (FIR)).
    2. State Aeronautical Information Publications (AIP).
    3. State Notices to Airmen.
    4. FAA chart supplements (e.g., Pacific and Alaska chart supplement).
- 6) Flightcrew qualification programs.
- 7) Manuals and other publications.
- 8) MMEL/MEL.
- 9) Issues unique to a particular operator.
- 10) Maintenance programs.

## **E. Contents of Flightcrew Qualification Programs.**

**1) Academic Training Subjects.** A basic source document for data link procedures in oceanic areas is the FOM, part 5. Policy and procedures applicable to specific FIRs are in state AIPs and NOTAMs. Address the following areas:

- Acronym Source: FOM part 2,
- General concepts of digital and analog communications,
- Expected flightcrew response,
- ATS coordination,
- Aircraft digital or analog communication equipment components, displays, alerts. (Sources: aircraft manufacturer documents.),
- Interface with other aircraft systems,
- AFM information MEL provisions,
- Data link events reports,
- Data link malfunction or irregularity reports, and
- Human factors—lessons learned.

### **2) Operational Use Training.**

- General requirement,
- Simulators,
- Computer-based instruction,
- Policy on initial pilot evaluation, and
- Recurrent training and evaluation.

### **3) Currency (recent experience).**

### **4) Line Checks and Route Checks (if applicable).**

### **5) Line-Oriented Flight Training (if applicable).**

**F. Operational Authorization Documents.** This issuance of paragraph A056 grants approval to use data link communications in operations. Either the certificate management office or Flight Standards District Office should coordinate the approval with AFS-400.

**Table 3-23. Communications Systems and Operating Environments**

This table lists the systems and their operating environment including the applicable criteria with references.

| Row | Aircraft Data Link System | Operating Environment  |                    |  | Applicable Standards   |
|-----|---------------------------|------------------------|--------------------|--|--|
|     |                           | Type of Airspace       | ATS Unit System    | Capabilities and Uses  |  |
| 1   | ATN B1                    | Domestic (Continental) | ATN B1             | <p>Supplemental ATC communications:</p> <p>Communication application supports data link initiation capability (DLIC) data link service.</p> <p>Controller Pilot Data Link Communications (CPDLC) application supports ACM, ACL, and AMC data link services.</p> <p>Note 1: departure clearance (DCL), downstream clearance (DSC), (Digital-Automatic Terminal Information Service (D-ATIS), and Flight Plan Consistency (FLIPCY) data link services are not supported.</p> | <p>a. DO-290/ED-120, Chg 1 and Chg 2, Continental Safety and Performance (SPR) Standard.</p> <p>b. DO-280B/ED-110B air traffic management (ATM) B1 INTEROP Standard.</p> |
| 2   | FANS 1/A+                 | Domestic (Continental) | ATN B1<br>FANS-1/A | <p>Same as row 1 except:</p> <p>Uses Aeronautical Telecommunications Network (ATN) ATC Facilities Notification</p>   | <p>Same as row 1 plus:</p> <p>a. DO-305/ED-154, FANS 1/A-ATN INTEROP Standard (Applies only to ATS Unit</p>  |

| Row | Aircraft Data Link System | Operating Environment |                 |   | Applicable Standards  |
|-----|---------------------------|-----------------------|-----------------|---|---|
|     |                           | Type of Airspace      | ATS Unit System | Capabilities and Uses   |   |
|     |                           |                       |                 | <p>(AFN) application for DLIC data link service.</p> <p>For CPDLC application, UM 215, TURN (direction) (degrees) is not supported.</p> <p>Note 2: FANS 1/A aircraft will require use of DM67 (free text) to mimic certain message elements per DO-290/ED-120 Chg 1 and Chg 2. See DO-305/ED-154 paragraph 4.2.13.2.</p> <p>Note 3: In accordance with DO-290/ED-120, Chg 1 and Chg 2, FANS 1/A aircraft will require use of a message latency timer per DO-258A/ED-100A, paragraph 4.6.6.9 and is denoted by a “+” appended to the “FANS 1/A” label.</p> <p>Note 4: Only via VHF data link subnetwork.</p> | <p>except see note 2).</p> <p>b. DO-258A/ED-100A, FANS 1/A INTEROP Standard (Applies only to aircraft).</p> |
| 3   | FANS 1/A+ or FANS 1/A     | Oceanic and remote    | FANS-1/A        | <p>Normal means of ATC communication uses AFN and CPDLC applications for direct controller-pilot communications</p>   | <p>a. DO-306/ED-122, Oceanic SPR Standard.</p> <p>b. DO-258A/ED-100A (or earlier versions) FANS 1/A</p>     |

| Row | Aircraft Data Link System | Operating Environment |                 |   | Applicable Standards     |
|-----|---------------------------|-----------------------|-----------------|---|--------------------------|
|     |                           | Type of Airspace      | ATS Unit System | Capabilities and Uses   |                          |
|     |                           |                       |                 | <p>(DCPC).</p> <p>Eligible for:</p> <p>Required Communication Performance (RCP) 240 operations via VHF, SATCOM Iridium and SATCOM Inmarsat subnetworks.</p> <p>RCP 400 operations via HF data link subnetwork.</p> <p>No RCP operations.</p> <p>Note 4: Aircraft capability that supports multiple RCP type operations needs to include appropriate indications and/or alerts to enable the flightcrew to notify ATC when aircraft equipment failures result in the aircraft's ability to no longer meet its criteria for any of the RCP types, per DO-306/ED-122, paragraph 5.2.6.a) and 5.2.6.b).</p> <p>Uses ADS-C application for automatic position reporting.</p> | INTEROP Standard.        |
| 4   | FANS 1/A+                 | Oceanic and           | CADS            | No CPDLC application.   | a. DO-306/ED-122 Oceanic |

| Row | Aircraft Data Link System                                      | Operating Environment |                 |  | Applicable Standards   |
|-----|--|-----------------------|-----------------|--|--|
|     |  | Type of Airspace      | ATS Unit System | Capabilities and Uses                                    |  |
|     | or<br>FANS 1/A   | Remote                |                 | Uses ADS-C application for automatic position reporting. | <p>SPR Standard.</p> <p>b. DO-258A/ED-100A (or earlier version), FANS 1/A INTEROP Standard (Applies only to aircraft)</p> <p>c. Centralized ADS (CADS) Common Specification, Version 2.0, approved ICAO NAT FIG/10, Paris, March 29–April 2, 2004 (Applies only to ATS unit)</p>   |
| 5   | Flight management system waypoint position reporting (FMS WPR) | Oceanic and Remote    | CFRS            | Same as row 4  | <p>a. DO-306/ED-122, Oceanic SPR Standard</p> <p>b. ARINC 702A, Advanced Flight Management Computer System (Applies only to aircraft)</p> <p>c. Central Flight Management Computer Waypoint Reporting System (CFRS) Common Specification, Version 2.0, approved International Civil Aviation Organization (ICAO) North Atlantic (NAT) FIG/10, Paris, March 29–April 2, 2004 (Applies only to ATS unit when</p> |

| Row | Aircraft Data Link System | Operating Environment |                  |                       | Applicable Standards   |
|-----|---------------------------|-----------------------|------------------|-----------------------|--|
|     |                           | Type of Airspace      | ATS Unit System  | Capabilities and Uses |  |
|     |                           |                       |                  |                       | ATS unit is CADS)  |
| 6   | FANS 1/A<br>ADS-C         | Oceanic and Remote    | FANS-1/A or CADS | Same as row 4         | <p>a. DO-306/ED-122 Oceanic SPR Standard</p> <p>b. DO-258A-ED-100A (or earlier version) FANS 1/A INTEROP Standard (If ATS unit is CADS, applies only to aircraft)</p> <p>c. CADS Common Specification, Version 2.0, approved ICAO NAT FIG/10, Paris, March 29–April 2, 2004 (Applies only to ATS unit when ATS unit is CADS)</p> |

**MSPEC A058, SINGLE PILOT PROGRAM FLIGHTS.** The program manager may be authorized to use certain program aircraft with approved autopilot systems in single pilot program flights provided the limitations and provisions of MSPEC A058 are met.

**MSPEC A059, USE OF ALTERNATE MANUALS, PROGRAMS, OR SYSTEMS.** The program manager may be authorized to use specific alternate manuals, programs, or systems (except for flight, duty, and rest provisions) in accordance with the limitations and provisions of MSPEC A059.

**OPSPEC A060, EUROPEAN AVIATION SAFETY AGENCY RATINGS FOR REPAIR STATIONS LOCATED OUTSIDE THE UNITED STATES.** This paragraph authorizes work performed under European Aviation Safety Agency (EASA)-rated repair stations if the appropriate form (EASA Form 3) authorizes the scope of the work.

**OPSPEC/MSPEC/LOA A061, USE OF ELECTRONIC FLIGHT BAG.**

NOTE: NextGen Tracking. Applications for approvals for this paragraph must be entered in the Regional NextGen Tracker as indicated in the General Procedures Section (Volume 3, Chapter 1, Section 1).

**A. Applicability.** Paragraph A061 is an optional authorization available to all operators conducting airplane operations under 14 CFR parts 91 subpart K (part 91K), 121, 125 (the Letter of Deviation Authority (LODA) 125 operators), and 135. Paragraph A061 authorizes the use of Class 1, Class 2, and/or Class 3 Electronic Flight Bags (EFB), and describes the conditions and limitations for EFB use.

NOTE: Questions regarding the issuance of OpSpec/MSpec/LOA A061 should be directed to the Flight Technologies and Procedures Division (AFS-400) at 202-385-4743, the Air Transportation Division (AFS-200) at 202-267-8166, or the General Aviation and Commercial Division (AFS-800) at 202-267-8212.

**B. General.** Aviation safety inspectors (ASI) and Aircraft Evaluation Groups (AEG) will no longer approve Class 1 and 2 EFB hardware and associated Type A and B application software. Instead, ASIs may authorize the use of Class 1 or 2 EFB devices, including those Class 2 EFBs containing Type C application software meeting requirements of the current edition of Technical Standard Order (TSO) C165, Electronic Map Display Equipment for Graphical Depiction of Aircraft Position, for display of “own-ship” position on airport moving map displays. Installation requirements and airworthiness approval remain unchanged.

1) Class 3 hardware and Type C software will be FAA-approved by the normal type certification processes (type certificate (TC)/Supplemental Type Certificate (STC)). For operations conducted under parts 91K, 121, 125 (including deviation holders), and 135, all EFBs will be authorized for use by OpSpec/MSpec/LOA. AEG evaluation of Class 3 and/or Type C will be published in the applicable Flight Standardization Board (FSB) report.

2) Class 1 or 2 hardware (with Type A and/or B software applications) must be demonstrated to reliably meet intended EFB functions. It is the responsibility of the applicant and/or the EFB hardware/software vendor to ensure that its EFB system and Type A and B

software applications can accurately perform intended functions. AEG evaluation of a Class 1 or 2 EFB (with Type B applications) will be at the AEG's discretion and published in an Operational Suitability Report (OSR) for the particular EFB.

**C. Background.** Advisory Circular (AC) 120-76, Guidelines for the Certification, Airworthiness, and Operational Approval of Electronic Flight Bag Computing Devices, current edition, and expired Notice N 8200.98, Electronic Flight Bag Job Aid, reference several instances of FAA inspector and AEG approval requirements for Class 1 and 2 EFB hardware and associated Type A and B application software (whether that software is sold separately or embedded in an EFB device). The guidance in this section replaces procedures and advisory material in FAA orders and ACs requiring an FAA inspector or the AEG to approve Class 1 and 2 EFB hardware and associated Type A and B software applications. The guidance in this section is not intended to stop or restrict the operational use of these devices and software. This section also replaces the cancelled Notice N 8000.353, Revised Guidance for Authorizing the Use of Electronic Flight Bags, Issuance of A061, Electronic Flight Bag, and Revision to A025.

1) In AC 120-76, the words “approved” and “approval” are used in many instances when referring to actions that may be accomplished by Flight Standards Service (AFS) ASIs. The uses of these words are intended to reflect the general process for approval or acceptance. The general process of approval or acceptance of certain operations, programs, documents, procedures, methods, or systems is an orderly method used by AFS inspectors to ensure that such items meet regulatory standards and provide for safe operating practices. It is a modular, generic process that can be applied to many types of approval or acceptance tasks. It is important for inspectors to understand that this process is a tool to be used with good judgment.

2) The application of the approval process described in ASI handbooks, coupled with the plain English definitions of approved and approval, has led to some confusion in the aviation community. AFS ASIs have no authority to approve EFB hardware or EFB application software. The guidance in this section is not intended to stop or restrict the operational use of these devices and software, but to clarify the role of AFS ASIs with regard to EFBs.

#### **D. Guidance.**

1) The authorization to use an EFB is optional and applicable to operators conducting operations under parts 91K, 121, 125 (including LODA holders), and 135. ASIs may authorize the use of Class 1, 2, and 3 EFB devices. (OpSpec/MSpec/LOA A025 is no longer used for the EFB authorization.)

2) Use A061 Table 1 for authorizing the use of a Class 1 EFB with Type “B” software installed or any Class 2 or 3 EFB. OpSpec/MSpec/LOA A061 will be used to document the aircraft make, model, and series (M/M/S), the EFB hardware class, manufacturer, model, software type, source, and revision number. Compliance with the requirements of OpSpec/MSpec/LOA A061 should be validated during routine inspections of the operator before it is issued.

3) ASIs and AEGs are not responsible for approving Class 1 and 2 EFB hardware and associated Type A and B application software.

a) Installation requirements and airworthiness approvals remain unchanged as specified in AC 120-76.

b) The appropriate AEG, at their discretion, may evaluate the EFB device installations that present new or novel functions and provide a report of operational suitability and/or adverse findings to the responsible aircraft certification or airworthiness entity having approval authority for the initial installation. OSRs are available at <http://fsims.avs.faa.gov> under “Publications,” “MMEL & AEG Guidance Documents,” “Flight Standardization Board (FSB) Reports.” ASIs should ensure that an operator complies with these reports when they are available for a particular EFB.

4) Class 1 and 2 EFB devices. A061 provides standardized text for the use of Class 1 and 2 EFB devices. The following is applicable for authorizing the use of Class 1 and 2 EFB devices:

a) Class 1 and/or 2 devices with Type A and/or B application software may be authorized for use in accordance with the technical guidance specified in AC 120-76. Class 1 devices with Type A or B application software and/or Class 2 devices with Type A or B application software and/or software approved under TSO-C165 (Type C) may be used.

NOTE: Technical guidance on Class 2 EFBs with Type C application software providing “own-ship” position is found in the current edition of AC 20-159, Obtaining Design and Production Approval of Airport Moving Map Display Applications Intended for Electronic Flight Bag Systems.

b) The maintenance and avionics inspectors must ensure that the aircraft and equipment have the proper airworthiness approvals for any power, databus connections, or mounting.

c) Training for the use and/or maintenance of the EFB by the certificate holder/program manager must be documented and included in the operator’s approved training program and applicable maintenance program.

d) The certificate holder/program manager will specify the procedures for updating and maintaining any databases necessary to perform the intended functions of the EFB in its manual.

e) The principal inspector (PI) is responsible for conducting a review of the system performance to ensure its acceptability prior to granting authorization to use. The PI should review the system performance using the EFB system user’s manual/pilot’s guide. The PI is responsible for evaluating the operators use of the EFB in normal and emergency operations, but not a review of the actual hardware or software.

f) The AEG is available to assist with questions and guidance regarding EFB operational evaluations. The PI should contact the AEG when an operator submits a request for authorization to use an EFB that includes a new or novel function. The AEG may evaluate Class 1 or 2 hardware or Type B software applications as necessary to address progression in available EFB equipment and functions in the aviation industry.

g) If a Class 1 or 2 EFB device is authorized for use, the ASI must enter the appropriate EFB information into the cells of the table. All other information in regard to the authorization for the use of an EFB should be documented in the operator's manual and not written into A061.

5) Aircraft Certification Service (AIR) must provide design, installation, and airworthiness approval for Class 3 EFB hardware that is permanently installed on an aircraft. This will be accomplished by incorporating the EFB into the aircraft type design or STC, not by field approvals. If a Class 3 EFB device is authorized to be used, the table in A061 should be appropriately filled out.

a) The Type C application software associated with Class 3 EFB device is also certified by AIR in reference to the current edition of RTCA/DO-178B, Software Considerations in Airborne Systems and Equipment Certification. Type A and B application software may be installed on these devices, but require no approval by the ASI as this software is protected from the Type C application software in the RTCA/DO-178 standard.

b) Operators should have procedures to control revisions to the EFB software in their manuals. Software version control is accomplished by using Table 1 in OpSpec/MSpec/LOA A061.

c) If Type A or B software is used in conjunction with Type C software in the Class 3 EFB, the name of the software must be documented in Table 1 of OpSpec/MSpec/LOA A061.

6) Simulator and/or in-flight validation tests may be needed to fully determine the suitability of the use of an EFB (see AC 120-76, paragraph 12(j), pages 21 and 22). Each operator's proposed EFB functionality and software will vary, and scenarios should be customized for the particular situation by the inspector and applicant. It is the operator's responsibility to demonstrate the function and reliability of the EFB.

a) Validation flight scenarios should be used to ensure that the EFB device's use has adequately transitioned into the operator's overall training and operations programs. In some cases, the task will be completed entirely with an EFB, while in other cases the EFB device may be used together with other sources of information, such as paper charts or documents, depending on the capabilities of the EFB device and its operational implementation.

b) The required EFB validation flight scenario differences could be affected by other factors, such as:

- Software: Type A, B, or C application;

- Hardware: Classes 1, 2, or 3, which include factors such as location in the flight deck and connectivity to other aircraft systems;
- Aircraft/Operations: Single pilot versus dual pilot, single EFB versus dual EFB; and
- Weather conditions: Visual versus instrument; very-low visibility.

**E. Inspector Action.** ASIs will review this section and provide pertinent information to the affected operators. OpSpec/MSpec/LOA A025 would be a nonmandatory revision to remove any EFB authorization.

1) ASIs will provide technical advice and guidance to operators, when requested, to assist them in evaluating their selected EFB devices using the technical guidance found in AC 120-76 but will no longer issue FAA approvals for the hardware and software. Authorization for use will be issued in reference to subparagraph E3) below.

2) If the operator has OpSpec A025 issued for electronic recordkeeping systems without the use of an EFB, it is not necessary to reissue that operator's OpSpec A025. Electronic recordkeeping system functions may co-reside on an EFB device and, if so, OpSpec A025 as well as OpSpec A061 should be issued as instructed below.

3) ASIs will use the new OpSpec/MSpec/LOA A061 EFB to authorize the use of a Class 1, 2, or 3 EFB device. Compliance with the requirements of OpSpec/MSpec/LOA A061 should be validated prior to the initial authorization to use an EFB and during routine inspections of the operator. If an EFB is authorized to be used, the table in A061 should be appropriately filled out. All other information in regard to the authorization should be documented in the operator's manual and not written into A061.

#### **OPSPEC/MSPEC A096, ACTUAL PASSENGER AND BAGGAGE WEIGHT**

**PROGRAM FOR ALL AIRCRAFT.** Passenger and cargo only operations conducted under 14 CFR parts 91K, 121, 125, and 135 that use actual weights, or asked/volunteered weights plus 10 pounds to account for the weight and balance of all company owned and operated aircraft, must be issued OpSpec A096. If OpSpec A096 is issued, OpSpecs A097, A098, and/or A099 may not be issued.

NOTE: Operators authorized to use average weight always retain the option to use actual weights.

#### **OPSPEC/MSPEC A097, SMALL CABIN AIRCRAFT PASSENGER AND BAGGAGE**

**WEIGHT PROGRAM.** Operators of small-cabin aircraft (aircraft type certificated for 5 to 29 passenger seats) that wish to use any combination of standard average, survey derived average, segmented, and/or actual passenger and baggage weights must be issued OpSpec A097. (The classification of small-, medium-, and large-cabin aircraft is based on the maximum type certificated number of passenger seats authorized for an aircraft, not the seating configuration as operated) If an operator elects to use only actual passenger and baggage weights, only OpSpec A096 must be issued. Table 1 of OpSpec A097 approves and tracks the general weight and balance control program weights that may consist of any combination of average, survey derived average, segmented, and/or actual weights. Operators approved for survey derived

average weights must specify the expiration date of such weights. The expiration date for survey derived average weights may not exceed 36 calendar-months, beginning the month the survey was completed to derive such average weights. Use Table 2 of OpSpec A097 to approve route specific program weights. The route specific program weights may be comprised of any combination of standard average, survey derived average, segmented, and/or actual passenger and baggage weights. Review AC 120-27, Aircraft Weight and Balance Control, current edition, before issuing OpSpec A097 to verify operator weight and balance control program compliance.

**OPSPEC/MSPEC A098, MEDIUM CABIN AIRCRAFT PASSENGER AND BAGGAGE WEIGHT PROGRAM.** Operators of medium-cabin aircraft (aircraft type certificated for 30 to 70 passenger seats) that wish to use any combination of standard average, survey derived average, segmented, and/or actual passenger and baggage weights must be issued OpSpec A098. (The classification of small-, medium-, and large-cabin aircraft is based on the maximum type certificated number of passenger seats authorized for an aircraft, not the seating configuration as operated.) If an operator elects to use only actual passenger and baggage weights, OpSpec A096 must be issued. Table 1 of OpSpec A098 approves and tracks the general weight and balance program weights that may consist of any combination of average, survey derived average, segmented, and/or actual weights. Operators approved for survey derived average weights must specify the expiration date of such weights. The expiration date for survey derived average weights may not exceed 36 calendar-months, beginning the month the survey was completed to derive such average weights. Use Table 2 of OpSpec A098 to approve route specific program weights. The route specific program weights may be comprised of any combination of standard average, survey derived average, segmented, and/or actual passenger and baggage weights. Review AC 120-27, Aircraft Weight and Balance Control, current edition, before issuing OpSpec A098 to verify operator weight and balance control program compliance.

**OPSPEC/MSPEC A099, LARGE CABIN AIRCRAFT PASSENGER AND BAGGAGE WEIGHT PROGRAM.** Operators of large-cabin aircraft (aircraft type-certificated for 71 or more passenger seats) that wish to use any combination of standard average, survey derived average, segmented, and/or actual passenger and baggage weights must be issued OpSpec A099. (The classification of small-, medium-, and large-cabin aircraft is based on the maximum type-certificated number of passenger seats authorized for an aircraft, not the seating configuration as operated.) If an operator elects to use only actual passenger and baggage weights, OpSpec A096 needs to be issued. Table 1 of OpSpec A099 approves and tracks the general weight and balance program weights that may consist of any combination of average, survey derived average, segmented, and/or actual weights. Operators approved for survey derived average weights must specify the expiration date of such weights. The expiration date for survey derived average weights may not exceed 36 calendar-months, beginning the month the survey was completed to derive such average weights. Use Table 2 of OpSpec A099 to approve route specific program weights. The route specific program weights may be comprised of any combination of standard average, survey derived average, segmented, and/or actual passenger and baggage weights. Review AC 120-27, Aircraft Weight and Balance Control, current edition, before issuing template A099 to verify operator weight and balance control program compliance.

**OPSPEC A101, ADDITIONAL FIXED LOCATIONS.** This paragraph identifies additional locations (facilities) within the FSDO that collectively form a certificated part 145 repair station's operational base without having to certificate each facility as a stand-alone or satellite repair station.

**A. Additional Locations.** All additional locations of the certificated repair station must be under the full control of the primary facility listed in OpSpec A001. Individual facilities are not required to be completely equipped with tools, equipment, and parts, but must have them available when they perform the work.

**B. Repair Station Manual (RSM).** The RSM must contain detailed procedures for the transport of equipment and parts between facilities. The RSM should also outline procedures to ensure adequate personnel are available to support the additional fixed locations/facilities while articles are undergoing maintenance. Further, using additional fixed locations does not constitute work away from the repair station.

**C. Bilateral Agreement (BA) Including Provisions for Maintenance.** When a repair station is located in a country with which the United States has signed a BA that includes provisions for maintenance of aircraft, engines, and appliances for installation on U.S.-registered aircraft, the repair station may operate in multiple facilities under one FAA air agency certificate within that country. The authorization requires the cooperation of the local national aviation authority.

NOTE: The repair station's additional locations may only be within the geographic boundaries of the BA country.

## **OPSPEC A117, USE OF ONBOARD FLIGHTCREW MEMBER REST FACILITIES.**

**G. Background.** This paragraph provides guidance for preparing OpSpec A117, Use of Onboard Flightcrew Member Rest Facilities. Under the limits of 14 CFR part 117, the airplane used must be equipped with onboard flightcrew member rest facilities any time a flightcrew member is conducting augmented operations. The class of rest facility used is an essential element in determining the maximum length of the flightcrew member's flight duty period (FDP).

**H. Part 117 Rest Facility Classifications.** Part 117, § 117.3 prescribes three classes of onboard flightcrew member rest facilities and includes design criteria and specifications for each classification. The FAA evaluates onboard flightcrew member rest facilities and determines their qualification in accordance with part 117 requirements. Information regarding evaluation and qualification of onboard rest facilities is contained in Volume 3, Chapter 58, Section 3, and the current edition of Advisory Circular (AC) 117-1, Flightcrew Member Rest Facilities. Section 117.3 defines the three classes of onboard flightcrew member rest facilities as follows:

**1) Class 1 Rest Facility.** A Class 1 rest facility is a bunk or other surface that allows for a flat sleeping position and is located separately from both the flight deck and passenger cabin, in an area that is temperature controlled, allows the flightcrew member to control light, and provides isolation from noise and disturbance.

**2) Class 2 Rest Facility.** A Class 2 rest facility is a seat in an aircraft cabin that allows for a flat or near-flat sleeping position, is separated from passengers by a minimum of a curtain to provide darkness and some sound mitigation, and is reasonably free from disturbance by passengers or flightcrew members.

**3) Class 3 Rest Facility.** A Class 3 rest facility is a seat in an aircraft cabin or flight deck that reclines at least 40 degrees and provides leg and foot support.

**I. OpSpec A117 Must be Issued Prior to any Augmented Flightcrew Operations.** A certificate holder must be issued A117 prior to conducting any augmented flightcrew member operations in accordance with the FDP limits prescribed in Table C of part 117 (Flight Duty Period: Augmented Operations). When issued, A117 serves as the source document identifying each of the certificate holder's airplanes having qualified onboard flightcrew member rest facilities. OpSpec A117 lists each onboard facility by aircraft, class, number of sleep surfaces, and the date of qualification.

**J. Rest Facility Technical Report.** In accordance with the requirements of Volume 3, Chapter 58, Section 3, qualification of a Class 1 rest facility is accomplished by the Aircraft Evaluation Group (AEG). A principal operations inspector (POI) will qualify a Class 2 or 3 rest facility. Regardless of who is conducting the qualification, certificate holders seeking rest facility qualification must provide the POI with a copy of a rest facility technical report containing the pertinent data for the rest facilities being qualified. The certificate holder's technical report should contain a list of each of their airplanes having rest facilities (by make, model, and series (M/M/S), registration, and serial number) that correspond to the installation approval source for that class of rest facility. This data will be instrumental in assisting the POI with preparing and/or updating the certificate holder's OpSpec A117. The rest facility technical report data must include:

1) The installation approval for each rest facility to be qualified, such as the type certificate (TC) approval, the Supplemental Type Certificate (STC) Designated Engineering Representative (DER) approval, or another acceptable means of approval; and

2) A list of airplanes by registration and serial number, M/M/S, classification of rest facility to be qualified, installation approval for the rest facility, and the number of sleep surfaces installed under that classification.

**K. Preparing and Issuing the Certificate Holder's OpSpec A117.** Using the airplane and rest facility data contained in the technical report, the POI will insert the required data into Table 1 of the certificate holder's OpSpec A117, identifying each of the certificate holder's airplanes by M/M/S, registration and serial number, class of rest facility, qualification date, and the number of sleep surfaces. When populating Table 1 of OpSpec A117, enter the following data into the appropriate section of the Table:

- The registration number of the airplane;
- The serial number of the airplane;
- The M/M/S number of the airplane;

- The classification of rest facility;
- The number of sleep surfaces installed in this airplane under the qualified rest facility classification; and
- The date the rest facility was qualified.

**L. Downgraded Rest Facility Classification.** With the exception of a rest facility that is properly deferred in accordance with the certificate holder's FAA-approved minimum equipment list (MEL), any time it is determined that a certificate holder's rest facility no longer meets its qualified classification, the rest facility must be downgraded to a lower classification. In this case, the airplane must be removed from the certificate holder's OpSpec A117 until such time as the airplane's rest facility is requalified to a lower classification. A certificate holder may not use an airplane that does not have a properly qualified rest facility in any operation requiring an augmented flightcrew. Once the airplane has been requalified to a lower classification, the airplane and its new qualification data must be appropriately inserted into the certificate holder's OpSpec A117.

**M. Modified or Altered Rest Facility.** In the event the FAA determines that a modification or alteration to a rest facility does not meet the classification previously qualified, that rest facility may be evaluated to a different (lower) classification, if applicable. If the FAA determines that the rest facility does not meet any of the three classifications, that airplane may not be used for augmented flightcrew operations. If it is determined that the rest facility does not meet any of the three classifications, or if a rest facility loses its qualification, the POI must remove the airplane from the certificate holder's OpSpec A117.

**N. Upgrading a Rest Facility.** A certificate holder may upgrade its rest facility to meet the specifications for a higher rest facility classification. This will require the rest facility to be requalified prior to using the FDP limits applicable for the higher rest facility classification. Upon satisfactory requalification to a higher classification, the certificate holder's OpSpec A117 must be updated to reflect the newly qualified rest facility the augmented FDP limits for the higher classification.

**O. Requalification of Previously Qualified Rest Facilities.** Requalification of a previously qualified rest facility is required when it is determined that it no longer meets the design criteria and specifications for that class of rest facility. The rest facility may be evaluated and qualified to a different (lower) classification such as a Class 1 to a Class 2. If the rest facility is qualified to a different class, the POI must reflect the new classification in the certificate holder's OpSpec A117. If it is determined that the rest facility does not meet any of the three classifications, the POI must remove the airplane from the certificate holder's OpSpec A117. A certificate holder may not use an airplane that not listed in its OpSpec A117 to conduct part 117 operations requiring an augmented flightcrew.

## **OPSPEC/TSPEC A304, FINAL APPROVAL OF AN AIRLINE TRANSPORT PILOT CERTIFICATION TRAINING PROGRAM.**

**A. General.** A304 is issued only with concurrence from the Air Transportation Division (AFS-200) or the General Aviation and Commercial Division (AFS-800), as applicable, to

14 CFR parts 121, 135, 141, and 142 certificate holders. The authorization indicates final approval to conduct the Airline Transport Pilot (ATP) Certification Training Program (CTP).

**B. Purpose.** Completion of the ATP CTP is required by 14 CFR part 61, § 61.156 after July 31, 2014, for those applicants seeking an ATP Certificate with airplane category and multiengine rating prior to taking the knowledge test.

**C. Process to Obtain Authorization.** The current edition of Advisory Circular (AC) 61-138, Airline Transport Pilot Certification Training Program, provides guidance on the minimum curriculum requirements and the process by which the FAA will approve an ATP CTP as required by § 61.156. Volume 3, Chapter 62, Sections 1 and 2, provide detailed instructions on reviewing and approving an ATP CTP.

**D. Issuing OpSpec/TSpec A304.** OpSpec/TSpec A304 may only be issued after receiving approval from AFS-200 for part 121 or 135 air carriers and part 142 training centers and from AFS-800 for part 141 pilot schools. Based on the information provided in the program, complete the information required by the tables in A304.

#### **OPSPEC A317, ACCEPTANCE OF A FATIGUE RISK MANAGEMENT PLAN (FRMP).**

**A. General.** On August 1, 2010, the President signed Public Law (PL) 111-216, referred to as the Airline Safety and Federal Aviation Administration (FAA) Extension Act of 2010, which focuses on improving aviation safety. Section 212(b) of the Act requires each air carrier conducting operations under Title 14 of the Code of Federal Regulations (14 CFR) part 121 to develop, implement, and maintain a Fatigue Risk Management Plan (FRMP). The FRMP is an active plan specific to the air carrier's type of operations that describes, through its policies and procedures, methods for managing and mitigating fatigue to improve flightcrew alertness and reduce performance errors. An FRMP is a management plan for addressing the potential effects of day-to-day flightcrew member fatigue associated with the air carrier's specific type of operations. The air carrier's FRMP should reflect its appropriate fatigue mitigation strategies applicable to its operations. For specific information on a FRMP, see Volume 3, Chapter 58, Section 1.

**B. Review and Acceptance Process.** The Air Transportation Division, AFS-200, is responsible for reviewing and either accepting or rejecting the air carrier's FRMP. For specific procedures on the FRMP review and acceptance process, refer to Volume 3, Chapter 58, Section 1.

**C. OpSpec Issuance.** The issuance of OpSpec A317 requires headquarters (HQ) approval.

1) The FAA will issue OpSpec A317 to each part 121 air carrier signifying its FRMP has been reviewed and has been determined to be acceptable. The maximum duration of the OpSpec is 24 calendar-months from the date of issuance and will be reflected on the air carrier's OpSpec A317. Therefore, at a minimum, each part 121 air carrier must submit an amended draft FRMP for review every 24 calendar-months.

2) The POI will be responsible for issuing OpSpec A317 upon receiving approval from AFS-200, and will incorporate the applicable text into the OpSpec as specified in the approval memo issued by AFS-200. For specific guidance on issuing OpSpec A317, refer to Volume 3, Chapter 58, Section 1.

**OPSPEC/MSPEC/LOA A353, AUTOMATIC DEPENDENT SURVEILLANCE-BROADCAST (ADS-B) OPERATIONS OUTSIDE OF U.S.-DESIGNATED AIRSPACE: 14 CFR PARTS 91, 91K, 121, 125, 125M, AND 135 CERTIFICATE HOLDERS/OPERATORS.**

NOTE: NextGen Tracking. Applications for approvals for this paragraph must be entered in the Regional NextGen Tracker as indicated in the General Procedures Section (Volume 3, Chapter 1, Section 1).

**A. Applicability.** Automatic Dependent Surveillance-Broadcast (ADS B) is a new system for air traffic surveillance within those areas where the ground infrastructure (ADS B ground station and air traffic communications network) is in place and available. ADS B is expected to play an increasing role in the National Airspace System (NAS) as its capabilities evolve, and is expected to be a key element in improving the use of airspace, improving airport surface surveillance, and enhancing safety. ADS B Out is the capability to send a formatted message that includes elements such as position, altitude, velocity, direction, etc., for use by air traffic in providing air traffic separation services.

**B. General Guidance.**

**1) ADS-B System Description.**

a) ADS-B is:

1. Automatic and periodically transmits position, velocity, and other information with no pilot or controller action required for the information to be transmitted;
2. Dependent on the aircraft position source (e.g., Global Navigation Satellite System (GNSS)/Global Positioning System (GPS));
3. Used for surveillance services, much like traditional radar; and
4. Used to broadcast aircraft position and other data to any aircraft or ground station equipped to receive ADS-B.

b) The ADS-B system consists of three elements:

1. Avionics. Installed aircraft avionics gather, format, and transmit the message elements from the aircraft via a discrete frequency. ADS-B messages include at least the following elements:

- Aircraft horizontal position (latitude/longitude).
- Aircraft barometric altitude.

- Aircraft identification: the assigned, unique International Civil Aviation Organization (ICAO) 24-bit address.
- Flight ID.
- Special Position Indicator (SPI).
- Emergency status.

NOTE: Flight ID, SPI, and the emergency status are the only message elements that can be modified by the flightcrew.

2. Navigation Source. Position data is typically derived from GNSS/GPS to determine an aircraft's position.

3. Ground Stations. The ground infrastructure must be in place to receive and process the message elements from aircraft and to provide the air traffic automation system with the necessary information for air traffic control (ATC) surveillance and separation services.

## **2) Application Process.**

a) The FAA Flight Standards Service (AFS) local field office receiving a certificate holder/operator request to conduct ADS-B operations should inform the applicant of the application process as shown in Figure 3-67E, Automatic Dependent Surveillance-Broadcast Application Submittal Process Flowchart.

b) For operations outside of U.S.-designated airspace (ADS-B Out), the nonstandard request process should be used (see subparagraph C):

NOTE: To obtain the nonstandard authorization A353, the certificate holder/operator and the responsible principal inspector (PI) are required to use the nonstandard request process. See Volume 3, Chapter 18, Section 2, paragraphs 3-712 and 3-713 for the nonstandard request process.

c) The local AFS field office will conduct a review of the applicant's submitted proposal using applicable guidance contained in subparagraph C and the checklist(s) referenced in subparagraph D. When compliance with all applicable requirements has been demonstrated, the PI will forward the proposal to their regional AFS Next Generation (NextGen) branch for review, as outlined in Figure 3-67E, along with a memorandum requesting AFS headquarters (HQ) concurrence to issue A353.

d) The regional AFS NextGen branch reviews the proposal and coordinates resolution of any discrepancies with the submitting PI. Once this coordination is complete, the regional AFS NextGen branch will forward the proposal to the Flight Technologies and Procedures Division (AFS-400) for coordination with the appropriate AFS HQ policy division(s).

e) Once AFS HQ determines that the proposal demonstrates compliance to all applicable requirements, the appropriate AFS HQ division will forward a letter of concurrence with the PI's request for issuance of the authorization to the submitting regional AFS NextGen

branch. The regional AFS NextGen branch will send the AFS HQ concurrence to the requesting PI.

f) Prior to issuance of the A353 authorization by the PI, the certificate holder/operator must comply with any provisions and limitations provided with the AFS HQ concurrence.

NOTE: To expedite issuance of the authorization, an advanced copy of the letter of concurrence may be sent by the appropriate AFS HQ division via e-mail to the regional AFS NextGen branch in advance of the official hardcopy.

**3) Applicability.** OpSpec/MSpec/LOA A353 is an optional authorization applicable to all certificate holders/operators conducting ADS-B operations under 14 CFR parts 91, 91 subpart K (part 91K), 121, 125 (including the Letters of Deviation Authority (LODA)), 125 subpart M (part 125M), and 135.

NOTE: Authorization to conduct ADS-B Out operations in the airspace defined in § 91.225(c) is not required. Additionally, authorization is not required to use Flight Information Service-Broadcast (FIS-B) or Traffic Information Service-Broadcast (TIS-B) services for situational awareness (SA) onboard the aircraft.

NOTE: The compliance date for the Automatic Dependent Surveillance-Broadcast (ADS-B) Out Performance Requirements to Support Air Traffic Control (ATC) Service final rule is January 1, 2020 (Registry Identification Number (RIN) 2120-AI92).

**4) ADS-B Out (Transmit) Functions.** Different avionics packages and suites are available to support ADS-B Out. The transmission of message elements by ADS-B-equipped aircraft is known as ADS-B Out.

### **5) Position Source Dependency.**

a) ADS-B derives horizontal and vertical position information from the positioning source on the aircraft, which is typically the GNSS/GPS navigation system. This can mean that the accuracy of the ADS-B system is directly related to the availability of the GPS constellation of satellites. In some installations the altimeter is also used as an added vertical cross-check referred to as baro-aiding. The navigation service and the altimeter must be available and of sufficient quality in order to provide the required level of safety to meet air traffic separation services standards. This dependency can become complicated since the operator is not aware, at any moment, what accuracy is being provided to the avionics.

b) The ADS-B system is heavily dependent on the continued high performance of the avionics and position source. This dependency requires an operator to ensure that the planned operation can meet the performance requirements for the entire route and time of the flight. For this reason, certificate holders/operators should check the availability of the ADS-B service and GNSS/GPS (e.g., Notice to Airmen (NOTAM)) to ensure that ADS-B performance is available.

## **6) Air Traffic Separation Services.**

a) Air traffic separation services using ADS-B enhances operations in several ways. ADS-B data is provided to ATC at a higher rate than existing radar surveillance, resulting in more accurate position information to the controller. This increased position accuracy enables more efficient and effective use of airspace.

b) Air traffic separation services using ADS-B are dependent on the quality and performance of the individual aircraft and the ground system. It is critically important that each piece of the system is operated and maintained in a manner that ensures design performance, supporting the approved safety levels associated with the operation.

**7) Contingency Operations.** A failure of any one component of the ADS-B system requires ATC to “fallback” to procedural separation standards. Therefore, service provider or certificate holder/operator reliance on ADS-B must be carefully weighed for the contingency operations, which may be required should the ground service, avionics, or positioning source fail.

## **C. Automatic Dependent Surveillance-Broadcast (ADS-B)-Related Definitions.**

**1) ADS-B.** A surveillance system in which an aircraft or vehicle to be detected is fitted with cooperative equipment in the form of a data link transmitter.

a) The aircraft or vehicle periodically broadcasts its GPS-derived position and other information such as velocity over the data link, which is received by a ground-based transmitter/receiver (transceiver) for processing and display at an ATC facility.

b) ADS-B is a system for airborne or surface aircraft, or other surface vehicles operating within the airport surface movement area, that periodically transmits a state vector and other information.

c) ADS-B is a function on an aircraft or surface vehicle operating within the surface movement area that periodically broadcasts its state vector (horizontal and vertical position, horizontal and vertical velocity) and other information. ADS-B is automatic because no external stimulus is required to elicit a transmission; it is dependent because it relies on onboard navigation sources and onboard broadcast transmission systems to provide surveillance information to other users.

d) ADS-B is an advanced surveillance technology where ADS-B-Out-equipped aircraft share position, altitude, velocity, and other information with ATC and other appropriately equipped aircraft.

## **2) ADS-B Out.**

a) The capability of an aircraft or surface vehicle to periodically broadcast its position, velocity, and other information. ADS-B Out is automatic in the sense that no flightcrew or controller action is required for the information to be transmitted. It is dependent surveillance in the sense that the surveillance information depends on the navigation and broadcast capability of the source.

b) Transmission of an aircraft's position, altitude, velocity, and other information to other aircraft and ATC ground-based surveillance systems.

**3) Extended Squitter (ES).** A long message (e.g., format DF=17) that Mode S transponders transmit automatically, without needing to be interrogated by a radar, to announce the own-ship aircraft's presence to nearby ADS-B-equipped aircraft.

**4) Global Navigation Satellite System (GNSS).**

a) A worldwide position, velocity, and time determination system that includes one or more satellite constellations, receivers, and system integrity monitoring, augmented as necessary to support the RNP for the actual phase of operation.

b) The generic term for a satellite navigation system, such as GPS, that provides autonomous worldwide geospatial positioning and may include local or regional augmentations.

**5) Global Positioning System (GPS).**

a) A space-based radio positioning, navigation, and time-transfer system. The system provides highly accurate position and velocity information, and precise time (on a continuous global basis) to an unlimited number of properly equipped users. The system is unaffected by weather and provides a worldwide common grid reference system. The GPS concept is predicated upon accurate and continuous knowledge of the spatial position of each satellite in the system with respect to time and distance from a transmitting satellite to the user. The GPS receiver automatically selects appropriate signals from the satellites in view and translates these into three-dimensional position, velocity, and time. System accuracy for civil users is normally 100 meters horizontally.

b) A space-based position, velocity, and time system composed of space, control, and user segments. The space segment, when fully operational, will be composed of 24 satellites in 6 orbital planes. The control segment consists of five monitor stations, three ground antennas, and a master control station. The user segment consists of antennas and receiver-processors that provide positioning, velocity, and precise timing to the user.

c) A U.S. satellite-based radio navigation system that provides a global positioning service. The service provided by GPS for civil use is defined in the GPS Standard Positioning System Performance Standard, 4th edition.

**6) International Civil Aviation Organization (ICAO) 24-bit Address.** Address assigned to each aircraft transponder of an ADS-B transmitter. For aircraft equipped with Mode S transponders, their replies to Traffic Alert and Collision Avoidance System (TCAS)

interrogations and their ADS-B transmissions should use the same 24-bit address, allowing correlations by Airborne Surveillance and Separation Assurance Processing (ASSAP).

**7) Mode S.** A Secondary Surveillance Radar (SSR) system that operates using addressed interrogation on 1030 megahertz (MHz), and the transponder replies on 1090 MHz. Mode S systems interrogate for aircraft identity (Mode A), altitude (Mode C), and other aircraft-specific information. The aircraft transponder replies with the requested information. Mode S supports a two-way data link and an ADS-B service known as ES.

**8) Position Source.**

a) The onboard avionics equipment that provides the latitude, longitude, geometric altitude, velocity, position and velocity accuracy metrics, and position integrity metrics. Additionally, the position source may provide the vertical rate parameters.

b) Within this OpSpec, the term Receiver Autonomous Integrity Monitoring (RAIM) is a synonym for Aircraft-Based Augmentation System (ABAS) and is used to refer to both RAIM and RAIM-equivalent algorithms.

**9) Secondary Surveillance Radar (SSR).** A radar sensor that listens to replies sent by transponders carried onboard airborne targets. SSR sensors, in contrast to primary surveillance radar (PSR) sensors, require the aircraft under surveillance to carry a transponder.

**10) Surveillance.** Detection, tracking, characterization, and observation of aircraft, other vehicles, weather, and airspace status information and phenomena for the purposes of conducting flight operations in a safe and efficient manner. The primary purposes of traffic surveillance (as distinct from all surveillance functionality) are to control the flow of aircraft, to provide SA for pilots and controllers, and to separate aircraft.

**D. ADS-B Out Operations Outside of U.S.-Designated Airspace.**

**1) Applicability.** See subparagraph A.

**2) Background.** ADS-B provides ATC with an alternate means of surveillance in regions where a radar-based system would be impractical (e.g., Gulf of Mexico (GOMEX), mountainous terrain, etc.) or economically viable. ADS-B allows application of reduced separation standards in these areas and improves the efficiency and safety of operations within the airspace. Currently, ADS-B provides surveillance coverage in several regions outside of U.S.-designated airspace, including portions of Australia, Canada, and in the Asia-Pacific region. Additional ICAO regions and Member States are expected to implement ADS-B in the future.

NOTE: As applicable, authorization under OpSpec A353 and a regional authorization (e.g., OpSpec B050) may be necessary to conduct ADS-B operations in areas outside of U.S.-designated airspace.

**3) Airworthiness Considerations.** The 1090ES message elements represent new or additional requirements for most certificate holders/operators, including identifying and performing regular specific maintenance actions to ensure the continued airworthiness of the

ADS-B equipment with all other interrelated avionics dependencies addressed. Specific checks of all required message elements should be completed on a periodic basis, including the correct functioning of system fault detectors and transmission of the ICAO 24-bit address assigned to each specific aircraft. It is important for the principal maintenance inspector (PMI) and principal avionics inspector (PAI) to ensure that adequate and specific procedures are in place for these checks.

NOTE: ADS-B equipment installed in accordance with AC 20-165 will be considered to meet the equipment requirements of European Aviation Safety Agency (EASA) Acceptable Means of Compliance (AMC) 20-24, Certification Considerations for the Enhanced ATS in Non-Radar Areas using ADS-B Surveillance (ADS-B-NRA) Application via 1090 MHz Extended Squitter, dated February 5, 2008. See AMC 20-24 for any additional maintenance, operational, and training considerations.

a) Return to service (RTS) requirements will be incorporated into the instructions for continued airworthiness (ICA) for both the ADS-B system and all source systems.

b) Full system-level testing is required any time the following conditions are met:

1. The main ADS-B transponder is replaced.

2. A source system is disturbed and there is a dedicated input to ADS-B that cannot be verified by other means (source system test, flight deck display, etc.).

**4) Canada-Specific Requirements.** All U.S. operators wishing to operate in ADS-B-designated airspace within Canada must be in compliance with the following requirements (current editions):

a) EASA AMC 20-24, Certification Considerations for the Enhanced ATS in Non-Radar Areas using ADS-B Surveillance (ADS-B-NRA) Application via 1090 MHz Extended Squitter;

b) Transport Canada AC 700-009, Automatic Dependent Surveillance-Broadcast (ADS-B), paragraph 6.2, Foreign Air Operators; and

c) NAV CANADA Aeronautical Information Circular (AIC) 21/09, Air Traffic Flow Management in the Vicinity of Hudson Bay as a Result of Automatic Dependent Surveillance Broadcast Out Implementation, for information related to ATC services supported by ADS-B.

NOTE: The certificate holder/operator must provide the appropriate Transport Canada Civil Aviation (TCCA) office or representative with a copy of the FAA-issued authorization (OpSpec/MSpec/LOA A353), as appropriate. The certificate holder/operator must also submit the unique ICAO 24-bit aircraft

address to NAV CANADA for each aircraft approved for use in ADS-B-designated airspace within Canada.

NOTE: NAV CANADA may accept formats other than octal (i.e., hexadecimal or binary) for the aircraft ICAO 24-bit address. The certificate holder/operator should coordinate with NAV CANADA for acceptable ICAO 24-bit address formats.

NOTE: NAV CANADA maintains an aircraft eligibility list of all aircraft approved for ADS-B services in Canada. Only aircraft with an authorized registration and/or ICAO 24-bit address will be provided ADS-B services.

**5) Australia-Specific Requirements.** All U.S. operators wishing to operate in designated ADS-B airspace within Australia must be in compliance with the following requirements (current editions):

a) EASA AMC 20-24, Certification Considerations for the Enhanced ATS in Non-Radar Areas using ADS-B Surveillance (ADS-B-NRA) Application via 1090 MHz Extended Squitter; and

b) For General Aviation (GA) operators, Civil Aviation Safety Authority (CASA) Civil Aviation Order (CAO) 20.18, Aircraft Equipment—Basic Operational Requirements; or for certificated operators, CASA CAO 82.5, Condition on Air Operators' Certificates Authorising Regular Public Transport Operations in High Capacity Aircraft.

**6) Asia-Pacific-Specific Requirements.** All U.S. operators wishing to operate in ADS-B-designated airspace within the Asia-Pacific (outside areas specifically identified previously) must be in compliance with the following requirements (current editions):

a) Singapore: EASA AMC 20-24, Certification Considerations for the Enhanced ATS in ADS-B-NRA Application via 1090ES; and

b) Singapore: AIC 14/10, Introduction to Automatic Dependent Surveillance Broadcast (ADS-B) Out Service within Parts of the Singapore FIR.

NOTE: The Civil Aviation Authority of Singapore (CAAS) plans to implement ADS-B operations after 2013 within the Singapore flight information region (FIR). See AIC 14/10 for specific airways that will require ADS-B.

## **7) General ADS-B Requirements.**

a) Aircraft Flight Manual (AFM) Requirements. The AFM, Aircraft Flight Manual Supplement (AFMS), Airplane Operations Manual (AOM), and/or pilot's operating handbook (POH), as applicable to the specific operator, must be carried in the airplane at all times when ADS-B Out equipment is installed in accordance with a type certificate (TC) or Supplemental Type Certificate (STC). The AFM/AFMS/AOM//POH, as applicable, of each aircraft type must contain a statement that the ADS-B system complies with EASA AMC 20-24 and if deviations are applicable. Deviations, as stated in AMC 20-24, may be included or

referenced. If the installed ADS-B system is compliant with AC 20-165, the appropriate manuals should indicate that the installation meets the equipment requirements of § 91.227. This can be accomplished by adding the following statement to the “General” or “Normal Procedures” section of the flight manual: “The installed ADS-B Out system has been shown to meet the equipment requirements of 14 CFR § 91.227.”

NOTE: Aircraft without an FAA-approved AFM/AFMS may use the certificate holder’s POH to meet the requirements in subparagraph C7)a) following review and concurrence by the local AFS field office PI.

b) Flight Operations Manual (FOM) or Equivalent Requirements. The certificate holder/operator (as applicable) must submit an FOM bulletin or equivalent to the flightcrews describing ADS-B to include:

- ADS-B system description,
- Cockpit setup,
- En route irregular/emergency procedures,
- Communications,
- Aircraft statement of compliance to EASA AMC 20-24, and
- Authorization (see subparagraph D1)).

c) Required Flightcrew/Dispatch/Flight Follower Training (as applicable). Before being authorized to use the ADS-B Out equipment, each member of the flightcrew (including part 91 operators) and the dispatcher/flight follower must have completed an approved training program that includes:

1. Use of ADS-B Out equipment,
2. Specific regional operating practices,
3. Normal procedures,
4. Flight planning,
5. Surveillance phraseology,
6. Emergency procedures,
7. Dispatch considerations (as applicable),
8. Minimum equipment list (MEL) considerations,
9. Human factors,
10. Safety considerations,

11. Equipment limitations, and

12. Contingency planning.

NOTE: If the certificate holder/operator outsources or contracts the ADS-B training to another entity, OpSpec A031 (if applicable) must be issued.

d) Training Verification. The PI must verify that the certificate holder's/operator's training is accomplished and that the AFM or supplements indicate compliance with EASA AMC 20-24 or AC 20-165.

e) Designation of Aircraft. OpSpec/MSpec/LOA A353, as applicable, requires specific designation of the aircraft approved for operations outside of U.S.-designated airspace. Aircraft make, model, and series (M/M/S), aircraft registration number, and aircraft serial number will be automatically populated to reflect the ADS-B authorization once the PI has updated the respective operator data/aircraft in the Web-based Operations Safety System (WebOPSS) to reflect the ADS-B authorization (see subparagraph D). It is important to ensure that the aircraft M/M/S, registration number, and aircraft serial number for each aircraft is properly recorded.

f) ICAO Regions of Operation. ADS-B Out operations conducted by certificate holders are not authorized beyond the areas specified in OpSpec/MSpec B050 (an example of B050 with applicable notes is located in the WebOPSS under the A353 guidance button).

**8) Certification Basis of the Aircraft Avionics.** The PI must determine that the certificate holder/operator understands and complies with all limitations and conditions associated with applicable STC requirements, Parts Manufacturer Approvals (PMA), and appropriate AFMSs.

a) The PMI and PAI will ensure that the ADS-B system is installed in compliance with the applicable STC or other appropriate aircraft certification requirements and that the certificate holder's/operator's maintenance program includes continuing airworthiness and maintenance personnel training requirements.

b) The POI will review the certificate holder/operator procedures for deferral of inoperative equipment and will coordinate with the PMI and PAI during the evaluation and approval of the certificate holder/operator MEL. The POI will also provide the operator with guidance for revising the existing airplane MEL. The PMI may need to issue or amend OpSpec D095, as appropriate. ADS-B equipment may not be listed as "Administrative Control Items" in the MEL.

c) The PI must verify that the certificate holder/operator is able to conduct the proposed operations, and validate that the appropriate training manuals, operations manuals, checklists, and operating procedures address ADS-B operations.

d) The certificate holder/operator must provide a listing of the aircraft make and model, registration number, serial number, and the make and model of the approved ADS-B equipment. Once the PI receives concurrence from the appropriate HQ policy division to issue

OpSpec/MSpec/LOA A353 (as applicable), the PI shall update the respective operator data/aircraft in WebOPSS to reflect the A353 ADS-B authorization (see subparagraph D1)).

**9) Application Package.** See subparagraph D1).

**E. ADS-B Information, Checklists, and Contact Information.**

1) For ADS-B application package checklist(s), training checklist(s), the A353 Authorization WebOPSS job aid, and other reference documents located in the WebOPSS A353 guidance section, see Figure 3-67D, Sample Application Package Checklist.

2) To access the reference documents in Figure 3-67D, move paragraph A353 to the workspace in WebOPSS. Once paragraph A353 is in the workspace, highlight A353 and click on the “Guidance” button at the bottom of the screen.

NOTE: AFS field office ASIs should make the appropriate application checklists and reference documents available to certificate holders/operators who do not have access to WebOPSS. Inspectors should encourage industry to complete the appropriate application checklist(s) prior to submission. Completion of the application checklist by certificate holders/operators is optional but highly recommended to expedite the application review process.

3) For additional ADS-B information, please contact the following:

a) For general information on operation requirements and procedures, contact AFS-400 at 202-385-4597, or in Lotus Notes at 9-AWA-AVS-AFS-400-Flight-Technologies-Procedures-Division/AWA/FAA.

b) For parts 121 and 135 special authorizations (300-series OpSpecs/LOAs), contact the Air Transportation Division (AFS-200) at 202-267-8166.

c) For parts 91, 91K, 125, and 125M special authorizations (300-series OpSpecs/MSpecs/LOAs), contact the General Aviation and Commercial Division (AFS-800) at 202-267-8212.

d) For continued airworthiness of ADS-B systems, contact the Aircraft Maintenance Division (AFS-300) at 202-385-6402.

e) For certification of ADS-B systems, contact AIR-130 at 202-385-4630.

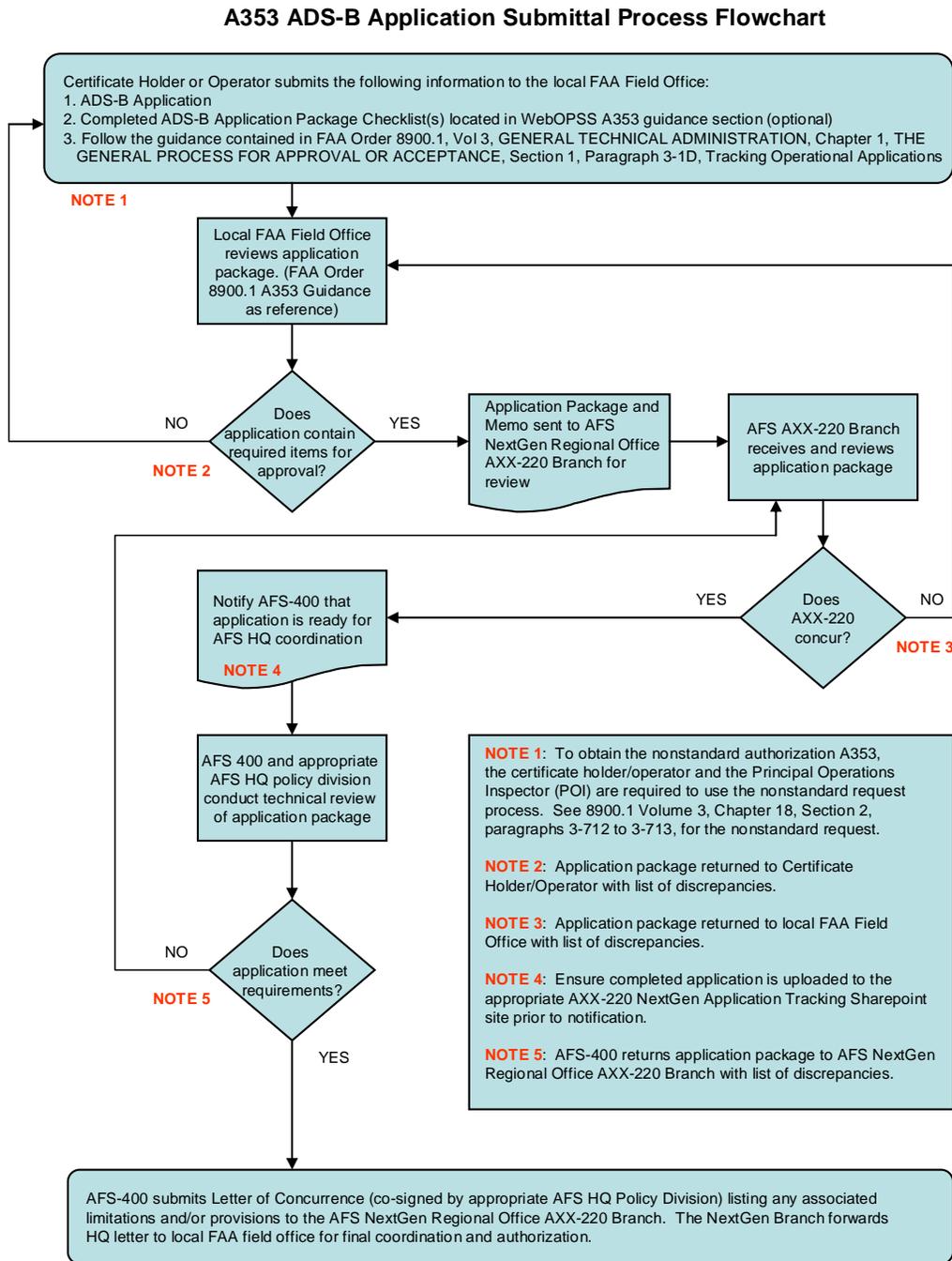
f) For technical questions concerning the Automatic Dependent Surveillance-Broadcast (ADS-B) Out Performance Requirements to Support Air Traffic Control (ATC) Service final rule, contact (by mail) the Surveillance and Broadcast Services Program Office, AJE-6, Air Traffic Organization, FAA, 800 Independence Avenue SW, Washington, DC 20591; or by telephone at 202-385-8637.

**Figure 3-67D. Sample Application Package Checklist**

| <b>Category</b>                   | <b>Title</b>   | <b>Description</b>   |
|-----------------------------------|--|--|
| Revision History                  | Revision History A353, 14 CFR Part 121   | This provides a chronological history of changes to the operations specification (OpSpec) paragraph. |
| FAA Order                         | Order 8900.1, Volume 3, Chapter 18, Section 3, OpSpec/Management Specification (MSpec)/Letter of Authorization (LOA) A353  | Guidance for OpSpec/MSpec/LOA A353, Automatic Dependent Surveillance-Broadcast (ADS-B) operations.   |
| Civil Aviation Order              | Australian Civil Aviation Safety Authority (CASA) CAO 20.18, Aircraft Equipment—Basic Operational Requirements   | Australian CASA's ADS-B requirements.  |
| Civil Aviation Order              | Australian CASA CAO 82.5, Conditions on Air Operators' Certificates Authorising Regular Public Transport Operations in High Capacity Aircraft  | Australian CASA's ADS-B requirements.  |
| Advisory Circular                 | Transport Canada Advisory Circular (AC) 700-009, Automatic Dependent Surveillance-Broadcast (ADS-B)  | Transport Canada AC on ADS-B.  |
| Advisory Circular                 | AC 20-165, Airworthiness Approval of Automatic Dependent Surveillance (ADS-B) Out Equipment for Operation in the National Airspace System (NAS)  | ADS-B equipment approval for the NAS.  |
| Aeronautical Information Circular | Civil Aviation Authority of Singapore (CAAS) Aeronautical Information Circular (AIC) 14/10, Introduction of Automatic Dependent Surveillance Broadcast (ADS-B) Out Service within Parts of the Singapore FIR | CAAS's ADS-B requirements when operating within the Singapore Flight Information Region (FIR).       |

| Category                          | Title  | Description   |
|-----------------------------------|--|---|
| Aeronautical Information Circular | NAV CANADA AIC 21/09, Air Traffic Flow Management in the Vicinity of Hudson Bay as a Result of Automatic Dependent Surveillance Broadcast Out Implementation |   |
| OpSpec/Mspec/LOA                  | A353 Authorization WebOPSS Job Aid   | Job aid on how to create an A353 ADS-B authorization in WebOPSS.  |
| Other                             | EASA Acceptable Means of Compliance (AMC) 20-24, Certification Considerations for the Enhanced ATS in ADS-B-NRA Application via 1090ES                       |   |
| Other                             | Sample Application Package Checklist   | Sample application package checklist to help FAA field inspectors review submitted ADS-B Out application packages.              |
|                                   |  |   |
| Other                             | Sample Training Topics Checklist   | Sample training topics checklist to help industry and FAA field inspectors develop respective ADS-B training program.           |
|                                   |  |   |
| Other                             | NAV CANADA ADS-B Functional Compliance Survey Form   | NAV CANADA ADS-B Functional Compliance Survey form to be completed by certificate holders/operators and remitted to NAV CANADA. |
|                                   |  |   |
| Other                             | Sample ADS-B Phraseology   | Surveillance phraseology.   |
| Other                             | ICAO Flight ID—FMC Quick Reference   | When conducting ADS-B operations, ensure the ICAO Flight ID is correctly entered into the flight management computer (FMC).     |

**Figure 3-67E. Automatic Dependent Surveillance-Broadcast Application Submittal Process Flowchart**



**Table 3-23B. Automatic Dependent Surveillance-Broadcast-Related Acronyms**

|           |   |
|-----------|---|
| 1090ES    | 1090 MHz Extended Squitter                                |
| ADS-B     | Automatic Dependent Surveillance-Broadcast                |
| ADS-B-NRA | Automatic Dependent Surveillance-Broadcast-Non-Radar Area |
| AFM       | Airplane Flight Manual                                    |
| AFMS      | Airplane Flight Manual Supplement                         |
| AIM       | Aeronautical Information Manual                           |
| AMC       | Acceptable Means of Compliance                            |
| ASSAP     | Airborne Surveillance and Separation Assurance Processing |
| ATC       | Air Traffic Control                                       |
| ATS       | Air Traffic Service                                       |
| EASA      | European Aviation Safety Agency                           |
| FIR       | Flight Information Region                                 |
| FOM       | Flight Operations Manual                                  |
| GNSS      | Global Navigation Satellite System                        |
| GPS       | Global Positioning System                                 |
| ICAO      | International Civil Aviation Organization                 |
| LOA       | Letter of Authorization                                   |
| LODA      | Letter of Deviation Authority                             |
| MEL       | Minimum Equipment List                                    |
| MHz       | Megahertz   |
| M/M/S     | Make, Model, and Series                                   |
| NAS       | National Airspace System                                  |
| NextGen   | Next Generation Air Transportation System                 |
| NM        | Nautical Mile   |
| NOTAM     | Notice to Airmen  |
| POH       | Pilot's Operating Handbook                                |
| RAIM      | Receiver Autonomous Integrity Monitoring                  |
| RIN       | Regulation Identifier Number                              |
| RNP       | Required Navigation Performance                           |
| SSR       | Secondary Surveillance Radar                              |
| STC       | Supplemental Type Certificate                             |
| TCAS      | Terrain Collision and Avoidance System                    |
| TCCA      | Transport Canada Civil Aviation                           |
| TSO       | Technical Standards Order                                 |

**OPSPEC/MSPEC/LOA A354, AUTOMATIC DEPENDENT SURVEILLANCE-BROADCAST (ADS-B) IN-TRAIL PROCEDURE (ITP) (14 CFR PARTS 91, 91K, 121, 125, A125, AND 135 CERTIFICATE HOLDERS/OPERATORS).**

NOTE: NextGen Tracking. Applications for approvals for this paragraph must be entered in the Regional NextGen Tracker as indicated in the General Procedures Section (Volume 3, Chapter 1, Section 1).

**A. General.** The In-Trail Procedure (ITP) is designed primarily for use in nonradar oceanic airspace to enable appropriately equipped Automatic Dependent Surveillance-Broadcast (ADS-B) In aircraft to perform flight level (FL) changes previously unavailable with procedural separation minima applied. The improved traffic information available to ADS-B In equipped aircraft allow ITP maneuvers to occur safely with application of reduced separation minima. ITP will enable FL changes to improve ride comfort, avoid weather, and obtain more favorable winds to improve fuel economy and arrival times.

NOTE: Refer to the current edition of AC 90-114, Automatic Dependent Surveillance-Broadcast (ADS-B) Operations, Appendix 2, Definitions for a more detailed description of the ITP.

**B. Applicability.** Paragraph A354 is an optional authorization available to operators conducting operations under 14 CFR parts 91, 91 subpart K (part 91K), 121, 125 (including A125 Letter of Deviation Authority (LODA) holders), and 135. Paragraph A354 authorizes the use of ADS-B In equipment for ITP.

NOTE: A part 125 LODA holder is an aircraft operator who is issued a LODA from §§ 119.23 and 125.5 (the requirement to hold an operating certificate and OpSpecs), and is identified in the Web-based Operations Safety System (WebOPSS) database as 125M. The “M” designation is assigned in WebOPSS to identify part 125 LODA holders in the database.

**C. General Guidance.** For authorization to conduct ITP, the certificate holder/operator and their responsible principal inspector (PI) or Flight Standards District Office (FSDO) are required to use the nonstandard request process in Volume 3, Chapter 18, Section 2, paragraphs 3-712 and 3-713.

NOTE: PIs and FSDOs should refer to Figure 3-67C, A354 Automatic Dependent Surveillance-Broadcast (ADS-B) Application Submittal Process Flowchart and Volume 3, Chapter 1, Section 1 for general guidance on processing and tracking proposals submitted for authorization to conduct ITP.

**D. Required Documentation for Submission of Formal Proposal.** A separate proposal must be submitted by the operator for each aircraft type at initial and subsequent requests for authorization to conduct ITP. Subsequent requests to add additional aircraft of the same make, model, and series (M/M/S) to an existing authorization should include the aircraft and equipment documentation contained in AC 90-114, Appendix 2, Section 6, paragraphs 4, 5, and 6. ITP proposals must contain the following information to be found acceptable for formal submission and FAA evaluation:

- 1) Letter of request for authorization to conduct ITP;
- 2) Aircraft qualification documentation;
- 3) ITP equipment description;
- 4) Proposed ITP operations area;
- 5) Proposed minimum equipment list (MEL) revisions;
- 6) Flight manual/pilot's operating handbook (POH) documentation;
- 7) Airworthiness documentation;
- 8) Dispatch/flight-following procedures (if applicable) or other persons with operational control; and
- 9) Pilot training.

**E. ITP Proposal Evaluation Criteria.** Specific evaluation criteria for ITP requirements can be found in AC 90-114, Appendix 2.

**F. Related ADS-B Material and Contact Information.**

1) Additional information and job aids related to ADS-B authorizations can be found in the applicable guidance section of each authorization in the WebOPSS.

NOTE: Flight Standards Service (AFS) Field Office (AFSFO) aviation safety inspectors (ASI) should make the appropriate application checklists and reference documents available to certificate holders/operators who do not have access to WebOPSS. Inspectors should encourage industry to complete the optional application checklist(s) prior to submission since it will expedite the review process.

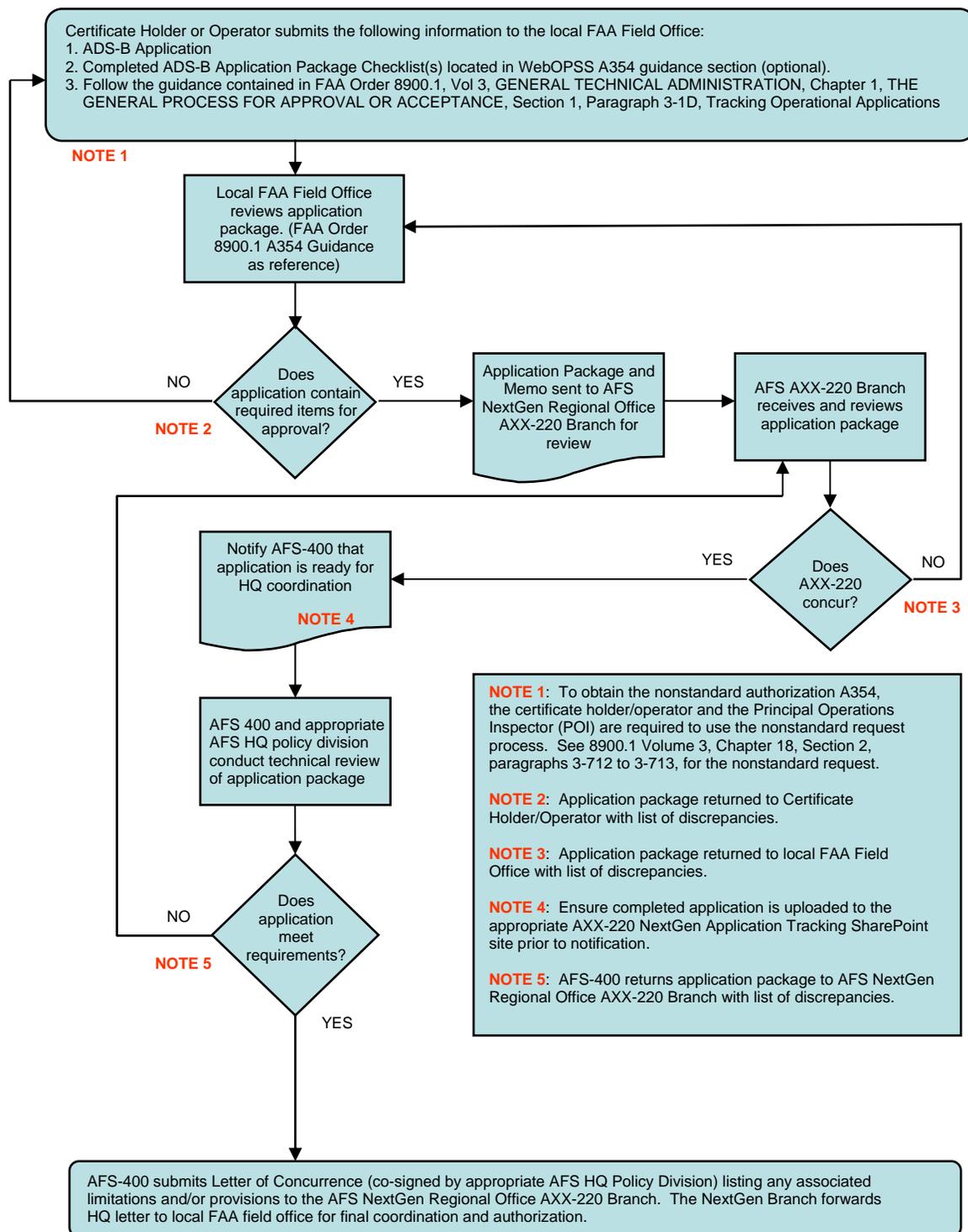
2) For additional ADS-B information, please contact the following:

a) For general information on operation requirements and procedures, contact the Flight Technologies and Procedures Division (AFS-400) by phone at 202-385-4597, or in Lotus Notes at 9-AWA-AVS-AFS-400-Flight-Technologies-Procedures-Division/AWA/FAA.

b) For parts 121 and 135 special authorizations (300-series OpSpec/LOA), contact the Air Transportation Division (AFS-200) at 202-267-8166.

- c) For parts 91, 91K, 125, and A125 special authorizations (300-series OpSpec/MSpec/LOA), contact the General Aviation and Commercial Division (AFS-800) at 202-385-9600/9601.
- d) For continued airworthiness of ADS-B systems, contact the Aircraft Maintenance Division (AFS-300) at 202-385-6402.
- e) For certification of ADS-B systems, contact the Avionics Systems Branch (AIR-130) at 202-385-4630.
- f) For technical questions concerning the ADS-B Out performance requirements to support air traffic control (ATC) service final rule, contact (by mail) the Surveillance and Broadcast Services Program Office (AJE-6), Air Traffic Organization, FAA, 800 Independence Avenue SW, Washington, DC 20591; or by telephone at 202-385-8637.

**Figure 3-67C. A354 Automatic Dependent Surveillance-Broadcast (ADS-B) Application Submittal Process Flowchart**



## **OPSPEC/MSPEC A447, EMERGENCY AIRWORTHINESS DIRECTIVES (AD) NOTIFICATION INFORMATION.**

**A. General.** OpSpec A447 is a permanent data collection OpSpec paragraph for certificate holders that conduct operations under 14 CFR parts 121, 125, and 135. The Emergency Airworthiness Directive (AD) Notification was originally put into OpSpec A047 and now is contained in A447 (see below for completion and issuance instructions for A447).

1) Essentially, the notification of emergency AD “receipt” is the responsibility of an operator’s management personnel. Part A of the templates is for general operations and management responsibilities.

2) The principal operations inspector (POI), along with the principal maintenance inspector (PMI) and the principal avionics inspector (PAI), is responsible to see that a certificate holder complies with an AD, as applicable for the operations of any particular aircraft. All three PIs are responsible for all the templates in Part A.

3) If needed, the principal inspector (PI) should fill out the appropriate information for the certificate holder and “activate” the OpSpec paragraph. The certificate holder is not required to sign the paragraph in the same way as an OpSpec authorization. If the FAA signs and activates the paragraph, it is considered to be effective.

4) The FAA uses the 400-series of templates in the OPSS for data collection.

**B. When to Issue an AD.** ADs are substantive regulations issued by the FAA in accordance with 14 CFR part 39. ADs are issued when an unsafe condition has been found to exist in particular aircraft, engines, propellers, or appliances installed on aircraft. ADs are also issued when that unsafe condition is likely to exist or develop in other aircraft, engines, propellers, or appliances of the same type design. Once an AD is issued, no person may operate a product to which the AD applies except in accordance with the requirements of that AD.

**C. Emergency ADs Require Immediate Action.** The FAA only distributes emergency ADs that affect transport category aircraft by facsimile. As such, all certificated operators are being required by an approved document to provide an AD point of contact (name, address, city, state, zip, telephone, and email) and a facsimile transmission telephone number for emergency AD notification. The owner or operator of an aircraft is responsible for maintaining that aircraft in an airworthy condition, as required by part 39 and part 91, § 91.403(a).

**D. Notification of AD Issuance.** Delegation and Airworthiness Programs Branch (AIR-140), will notify all affected operators of the issuance of the emergency ADs via the facsimile number(s) identified by the operator’s method of notification in the template.

1) Parts 121 and 125 operators. AIR uses facsimiles for the official notification of the transport category emergency ADs to part 121 and 125 operators. AIR mails paper copies of ADs to all applicable registered owners (part 135 and others).

2) All other operators. Due to a large number of owners/operators (parts 91, 129, 135, etc.), AIR uses the FAA Aircraft Registry address database and the United States Postal Service for official notification of emergency ADs. AIR uses the information in template A447 to verify those addresses.

3) AIR no longer uses Société Internationale de Télécommunications Aéronautiques (SITA), ARINC, or TELEX codes for electronic notification. AIR does not use email for official emergency AD notification or receipt acknowledgement.

**E. Confirmation of AD Receipt.** Upon receipt of an emergency AD, the certificate holder will immediately confirm receipt of the AD by signing the fax cover page and faxing it to AIR-140 at (405) 954-4104. This ensures the FAA that all operators affected by an emergency AD have been notified in time to comply with its requirements and avoid any undue safety risks.

**F. Listing of Historical ADs.** ADs from the 1940s to the present are now available in electronic format for full text searching on the FAA Web site at [www.airweb.faa.gov/rgl](http://www.airweb.faa.gov/rgl). You can also find ADs from the FAA home page ([www.faa.gov](http://www.faa.gov)) by clicking on Airworthiness Directives. Direct questions to any of the following:

Automated Systems Branch (AFS-520) (202) 267-3522  
Airworthiness Programs Branch (AFS-610) (405) 954-6896  
AIR-520 (202) 267-3682

**OPSPEC/MSPEC A449, ANTIDRUG AND ALCOHOL MISUSE PREVENTION PROGRAM.** OpSpec/MSpec A449 is applicable for 14 CFR parts 121, 121/135, and 135 certificate holders; 14 CFR part 91 subpart K (part 91K) (fractional owners) program managers; and 14 CFR part 145 repair station certificate holders. Inspectors must use LOA A049 for part 91K operators conducting sightseeing operations under part 91, § 91.147.

- The certificate holders or program managers are responsible for providing the information required by 14 CFR part 120 to the principal operations inspectors (POI) for the issuance of OpSpec/MSpec A449, as applicable;
- OpSpec/MSpec A449 is a data collection template and should not be construed as a Flight Standards Service (AFS) authorization;
- Oversight of the actual implementation of the Antidrug and Alcohol Misuse Prevention Program is the function of the Office of Aerospace Medicine (AAM), Drug Abatement Division (AAM-800);
- When any changes occur, certificate holders/program managers are responsible for providing AFS with current information to update and amend A449;
- Even though the A449 OpSpec/MSpec template is for data collection purposes, it should be signed by the certificate holder because they are “certifying” that the information is accurate and that they will comply with the applicable requirements of part 120; and
- In the part 91K database, the program manager is certifying that the information is accurate for its Antidrug and Alcohol Misuse Prevention Program.

**A. Applicability.** The following must comply with the Antidrug and Alcohol Misuse Prevention Program regulations in accordance with part 120, and must have OpSpec/MSpec A449 issued by AFS:

- All parts 121 and 135 certificate holders; and
- All part 91K program managers must have an Antidrug and Alcohol Misuse Prevention Program. MSpec A449 must be issued indicating where those records are kept.

**B. Issuance.** All parts 121 and 135 certificate holders must be issued OpSpec A449.

- Existing parts 121 and 135 certificate holders must provide the information to their POIs that is required by part 120 for the issuance of OpSpec A449;
- New parts 121 and 135 certificate holders must have an Antidrug and Alcohol Misuse Prevention Program and OpSpec A449 issued by their POI before beginning operations pursuant to the certificate;
- The Antidrug and Alcohol Misuse Prevention Program shall be implemented concurrently with the beginning of such operations;
- When a part 121 or 135 certificate holder surrenders its certificate or its certificate is terminated, revoked, or suspended, it must discontinue testing under its Antidrug and Alcohol Misuse Prevention Program. OpSpec A449 should be archived when the certificate is no longer in an active status;
- Part 135 certificate holders must declare whether they have 50 or more safety-sensitive employees or fewer than 50 safety-sensitive employees. Whenever the number changes from 50 or more to fewer than 50, or vice versa, the certificate holder must inform the POI and OpSpec A449 would need to be amended; and
- Certificate holders that operate under parts 121 and 121/135 are required to report testing data annually to AAM, regardless of the number of safety-sensitive employees in their company. Therefore, there is no requirement to declare when the number of their safety-sensitive employees crosses over or below 50.

**C. Air Tour Operators Under Part 91K.** Part 121 or 135 certificate holders that conduct commercial air tour operations under § 91.147 must be issued a separate LOA from the part 91 database and issued a separate four-character identifier. Certificate holders must implement a second drug and alcohol testing program to conduct operations under § 91.147. Even though the same company may be conducting operations under part 121 or 135 and air tour operations under § 91.147, the FAA's regulations consider the two operations to be separate entities for drug and alcohol purposes. Exemptions to this rule are outlined in § 91.146.

**D. Restriction.** No applicable certificate holder or operator shall use a contractor's employee to perform safety-sensitive functions who is not subject to its own or a certificate holder's or operator's Antidrug and Alcohol Misuse Prevention Program. All new applicable certificate holders and operators must ensure that their contract employees who perform safety-sensitive functions are subject to an Antidrug and Alcohol Misuse Prevention Program.

**E. Responsibilities.** All oversight of the Antidrug and Alcohol Misuse Prevention guidance, inspections, and enforcement activity will be conducted exclusively by AAM-800. Any and all enforcement actions to be taken for violations of part 120 and other sections of 14 CFR related to drug and alcohol testing by the aviation industry is the sole responsibility of AAM-800. Any indication of possible regulatory violations of these provisions must be referred to AAM-800. All questions regarding the Antidrug and Alcohol Misuse Prevention Program must be directed to AAM-800.

**F. Part 145 Repair Stations.** See Volume 3, Chapter 18, Section 11.

## **OPSPEC A501, LIABILITY INSURANCE SUSPENSION FOR SEASONAL OPERATIONS.**

**A. Liability Insurance Does Not Apply to Certificate Holders With Operating Certificates.** Liability insurance coverage and the associated Department of Transportation (DOT) forms (Office of the Secretary of Transportation (OST) Form 6410, U.S. Air Carrier Certificate of Insurance) are an inclusive part of the economic authority required for parts 121 and 135 air carrier certificate holders. This is not applicable to those with operating certificates. 14 CFR part 205, § 205.4(b) states, in part, that “Aircraft shall not be listed in the carrier’s operations specifications with the FAA and shall not be operated unless liability insurance coverage is in force.”

**B. Suspending Liability Insurance for Seasonal Operations.** Title 14 CFR part 119, § 119.61(b)(4) provides for the issuance of OpSpec A501, Liability Insurance Suspension for Seasonal Operations, which effectively suspends the air carrier certificate holder’s OpSpecs and requirement for liability insurance for the period of time established in Table 1 of OpSpec A501. The operator cannot use the aircraft during that period of time to conduct operations in air transportation. The POI and the PMI must coordinate this effort.

**C. Circumstances Under Which to Issue OpSpec A501.** OpSpec A501 may be issued in order to comply with the requirements of § 119.61, § 205.4(b) and, if the air carrier certificate holder:

- Does not want to surrender its certificate during nonoperational periods,
- Requests the issuance of OpSpec A501 in writing, specifying the date it chooses to cease operations and the date it will resume operations,
- Wants to cancel the liability insurance on all of its aircraft for a period of 60 days or more during the specific period of non-use, and
- Completely ceases operations for a period of 60 days or more during the specific period of non-use.

**D. No Status Change to VIS or OPSS.** The status of the air carrier certificate holder’s certificate remains active even though the OpSpecs are in the “suspension” status. Make no status changes to the Enhanced Vital Information Database (eVID) or the OPSS.

**E. Opting to Not Carry Liability Insurance.** If the air carrier certificate holder does not want to cease all operations but wants only to reduce the number of aircraft operated for a period of time and not carry the liability insurance for those aircraft, it has two options:

- 1) Remove those aircraft completely from its OpSpecs, or
- 2) Place those aircraft into long term maintenance or long term storage and issue OpSpec D106, Aircraft in Long Term Maintenance or Storage (reference Volume 3, Chapter 18, Section 6, Parts D and E—Maintenance MSpecs/OpSpecs).

**F. Notification of Suspension of Insurance.** The air carrier certificate holder or its insurance company will send notification of the suspension of liability insurance to the appropriate FAA or DOT office as required by part 205, § 205.7(a). (The FAA will record the notification and the red alert clause, “Insurance in a Non-Compliant State,” will appear at the top of the “Maintain Operations Specifications” window in the OPSS for that certificate holder.) (Use the “Review Insurance Info” selection in the OPSS to view the details of the noncompliance.)

**G. Separate Uses for OpSpecs A501 and D106.** At no time will OpSpecs A501 and D106 be active at the same time. These paragraphs are developed as separate provisions for specific needs. (See Volume 3, Chapter 18, Section 6 for guidance on OpSpec D106.)

#### **H. Start Up Procedures and Rescinding OpSpec A501.**

1) Before the “Re-Start of Operation” date listed in Table 1 of OpSpec A501, the air carrier must reinstate the required liability insurance. OST Form 6410 must be filed with the appropriate FAA or OST office at least 5 days prior to the “Re-Start of Operation” date listed in Table 1 of the OpSpec.

2) PIs should verify with AFS-260 (for air taxi operators), AAL-230 (for Alaskan air carriers), and OST-X-56 (for DOT certificated and commuter carriers) that the air carrier has filed evidence of liability insurance coverage as required by 14 CFR part 205 and that it otherwise continues to hold the necessary economic authority to resume operations.

3) See Volume 6, Chapter 2, Section 38, Evaluate a Part 121/135.411(a)(2) Operator Aircraft Storage Program, paragraph 6-1048, OpSpec D106, Aircraft in Long Term Maintenance or Storage for additional guidance in regard to liability insurance.

4) OpSpec A501 must be rescinded and archived in the OPSS. Again, make no changes to the VIS or the OPSS for the certificate status. When the required liability insurance documentation is received by AFS-260, the red alert clause will be removed for that certificate holder. See Volume 3, Chapter 18, Section 2, Automated Operations Safety System (OPSS), paragraph 3-718, OPSS Liability Insurance Subsystem, for information regarding the alert clause.

5) The principal inspector must review the recency requirements of § 119.63 for the air carrier certificate holder and reexamine as necessary prior to the start of the seasonal operations.

### **OPSPEC A502, AIR CARRIER MERGER AND/OR ACQUISITION.**

**A. General.** OpSpec A502 is a nonstandard, time-limited OpSpec that requires coordination with, and approval from, the appropriate headquarters (HQ) policy division. Upon receiving approval from HQ, principal inspectors (PI) will issue A502 to each certificate holder involved in a merger and/or acquisition as a means of authorizing the plans for transition during the merger or acquisition process. Certificate holders involved in a merger or acquisition will lay out their plan for the transition that will occur throughout the merger or acquisition process by entering information in the appropriate sections of A502. FAA approval of a merger and/or acquisition transition plan occurs at the regional Flight Standards division (RFSD) of the certificate-holding district office (CHDO) who will have oversight responsibility of the surviving certificate holder in the merger/acquisition. The surviving certificate number (certificate designator followed by four additional characters, e.g. TWRA118A) identifies the surviving certificate holder, regardless of the surviving name chosen. Typically, the RFSD will form a Joint Transition Team (JTT) to manage the merger/acquisition. The RFSD of the surviving certificate holder will contact the Air Transportation Division (AFS-200) as soon as practicable upon the knowledge of the pending merger or acquisition, and ultimate selection of the JTT. The RFSD will provide AFS-200 with a point of contact (POC) for the merger or acquisition at this time. Although the overall merger/acquisition transition plan is approved at the RFSD level, OpSpec A502 must be approved by AFS-200 in coordination with the Aircraft Maintenance Division (AFS-300). OpSpec A502 is dynamic and should be updated as significant events in the merger or acquisition process occur. Each update of A502 must also be approved by AFS-200, in coordination with AFS-300. It's important to note that each certificate holder involved in a merger or acquisition will be issued an A502. This means that A502 will be issued to the intended surviving certificate holder, as well as each intended merged or acquired certificate holder. Additional guidance regarding the merger and/or acquisition process is located in Volume 3, Chapter 34.

**B. Entering Information into A502, Paragraph a.** A502, paragraph a contains three fields in which a PI or certificate holder will enter the following information:

NOTE: The name of the certificate holder will be automatically populated into paragraph a of the A502 template by WebOPSS.

1) The PI will enter the name of the other certificate holder involved in the merger or acquisition in the first text box in paragraph a.

2) The PI will enter the date the merger or acquisition process will begin in the second text box in paragraph a. This date will indicate the commencement of the transition phase.

3) The PI will enter the description of the estimated time period within which the merger and/or acquisition will be accomplished and completed in the third text box of

paragraph a (for example, 12 months). It is also acceptable if a PI or certificate holder wishes to enter an actual date as opposed to a time period (for example, 10/26/2011).

**C. Entering Information into the Sections Provided in Paragraph b.**

A502, paragraph b contains specific sections that provide an outline of certain conditions that certificate holders must meet while operating during the merger and/or acquisition transition period. These sections are General, Operations, and Airworthiness. PIs responsible for the subject of each field must review and agree to all of the information contained therein if a field is populated by the certificate holder, otherwise the PI responsible for each field will enter the information.

**1) The “General” Section.** PIs of both specialties (Operations or Airworthiness) will use the “General” section to identify conditions that do not belong specifically to operations or airworthiness. Examples of key items that must be entered into the “General” section include, but are not limited to:

a) Estimated single operating certificate date. This is the date when the certificate holder operates as a single air carrier and has a singular system for operational control.

b) OpSpecs requiring HQ approval. List all OpSpecs that require HQ approval, (such as 300-series, nonstandard 500-series, and OpSpecs containing optional/nonstandard text (“text 99”). All HQ-approved OpSpecs and nonstandard text authorizations for each certificate holder must be reapproved by HQ for continued use by the surviving certificate holder. In other words, nonstandard OpSpecs and text authorizations for one certificate holder may not be applied to another without the express permission of the appropriate HQ policy division.

c) Pilot Record Information Act of 1996 (PRIA). A502 must contain a statement of how the surviving certificate holder intends to comply with PRIA.

d) Demonstration of Emergency Evacuation Procedures. A502 must contain a statement or plan of how the surviving certificate holder intends to meet the regulatory requirements 14 CFR part 121, § 121.291 for demonstration of emergency evacuation procedures. The plan must address demonstration of aircraft newly introduced to the surviving certificate holder, as well as a change in the number, location, or emergency evacuation duties or procedures of the certificate holder’s Flight Attendants (F/A).

e) Training of Station Personnel. A502 must contain a statement as to how the surviving certificate holder intends to train station personnel to a single standard of operation.

f) The name of the surviving certificate holder and certificate designation.

g) Flight Call Signs. Each A502 must contain information regarding flight call signs and numbering, specific to each certificate holder involved in the merger or acquisition process. Call signs, especially with livery changes, must be coordinated with the appropriate Air Traffic Organization (ATO).

h) Hazardous Material (hazmat) Training. A502 must contain a statement of how the surviving certificate holder intends to comply with the hazmat training requirements of part 121, Appendix O, for employees acquired during the merger or acquisition.

i) Drug and Alcohol Testing. A502 must contain a statement of how the surviving certificate holder intends to comply with the drug and alcohol testing requirements of 14 CFR part 120, for employees acquired during the merger or acquisition..

j) Recordkeeping. A502 must contain a statement of how the each certificate holder intends to comply with recordkeeping requirements such as those listed in part 121 subpart V.

**2) The “Operations” Section.** The principal operations inspector (POI) is responsible for the “Operations” section. The key areas that should be addressed in the “Operations” section include, but are not limited to:

a) Operational Control. Identify which air carrier will assume operational control responsibility over the merged or acquired operation and the date that transfer is planned to take place. This date should coincide with the “Estimated Single Operating Certificate” date entered into the “General” section of A502. If the changeover is to be phased in over a period of time, such as by fleet, enter appropriate milestones here. Milestones listed in this field must correlate with the same milestones in the transition plan.

b) Training and Qualification. Identify the planned dates that flightcrew member, aircraft dispatcher (14 CFR part 121 domestic and flag), and Flight Attendant (F/A) training and qualification will be completed. If two or more fleets will be phased in over different time periods, enter the fleet types and their associated training and qualification date milestones in the free text fields provided. Include training for flight following and operational control personnel in this section, as appropriate. Milestones listed in this field must correlate with the same milestones in the transition plan.

c) Proving Tests. Identify the requirements and the plan of action regarding the proving tests required to add a new type of aircraft, operation, and/or route (area of operation).

d) Operational Authorizations. Identify operational authorizations, such as Extended Operations (ETOPS), exemptions, deviations, etc., and list the plan of action for merging and/or acquiring each of the authorizations.

NOTE: POIs of certificate holders with large varied fleets must be aware that merging ETOPS authorizations may be a lengthy process.

e) Other. Identify any other operational milestones such as manual revisions, computer systems, and computer system support.

**3) The “Airworthiness” Section.** The principal maintenance inspector (PMI) and principal avionics inspector (PAI) are responsible for the “Airworthiness” section. The key areas that must be addressed in the Airworthiness section include, but are not limited to:

a) Maintenance Program Manuals. List maintenance program manual milestones in this field.

b) Training and Qualification of Maintenance Personnel. Identify the training and qualification requirements of the mechanics and inspectors, and list the plan of action for accomplishing the necessary training.

c) Minimum Equipment List (MEL) Management Program and Maintenance Control System. Identify the transition plan for MEL management programs and the associated maintenance personnel and maintenance control systems.

d) Other. Identify any other appropriate maintenance milestones such as manual revisions, computer systems, and computer system support.

### **OPSPEC/TSPEC A504, INITIAL APPROVAL OF AN AIRLINE TRANSPORT PILOT CERTIFICATION TRAINING PROGRAM.**

**A. General.** A504 is issued only with concurrence from the Air Transportation Division (AFS-200) or the General Aviation and Commercial Division (AFS-800), as applicable, for 14 CFR parts 121, 135, 141, and 142 certificate holders. The authorization indicates initial approval to conduct the Airline Transport Pilot (ATP) Certification Training Program (CTP).

**B. Purpose.** Completion of the ATP CTP is required by 14 CFR part 61, § 61.156 after July 31, 2014, for those applicants seeking an ATP Certificate with airplane category and multiengine rating prior to taking the knowledge test.

**C. Process to Obtain Authorization.** The current edition of Advisory Circular (AC) 61-138, Airline Transport Pilot Certification Training Program, provides guidance on the minimum curriculum requirements and the process by which the FAA will approve an ATP CTP as required by § 61.156. Volume 3, Chapter 62, Sections 1 and 2, provide detailed instructions on reviewing and approving an ATP CTP.

**D. Issuing OpSpec/TSpec A504.** OpSpec/TSpec A504 may only be issued after receiving approval from AFS-200 for part 121 or 135 air carriers and part 142 training centers and from AFS-800 for part 141 pilot schools. Based on the information provided in the program, complete the information required by the tables in Template A504.

**OPSPEC A545, AUTHORIZED AIRPORTS FOR DOMESTIC OR FLAG SUBSTITUTE SCHEDULED OPERATIONS.** OpSpec A545 is an optional, standard, and time limited OpSpec that can be issued to a certificate holder to temporarily authorize airports for use in 14 CFR part 121 substitute scheduled operations. Each substitute scheduled operation is limited to 5 consecutive calendar-days and may only be conducted once in any 30-day period using the same airports. A certificate holder may conduct a substitute scheduled operation on behalf of another certificate holder in accordance with 14 CFR part 119, § 119.53(e). For the purposes of A545, a single substitute scheduled operation on the behalf of another certificate holder may consist of more than one flight.

**A. A545 is Not Always Required.** The following substitute operations do not require A545:

1) A545 is not required for a substitute scheduled operation conducted by a certificate holder who holds the same OpSpec authority for a kind of operation; area of operation; and airports for scheduled operations, as the certificate holder for whom the substitute operation is being conducted.

a) The certificate holder conducting the substitute operation has the identical authority in OpSpec A001 to conduct domestic or flag operations, as applicable to the substitute operation.

b) The certificate holder conducting the substitute operation has all of the required authorized areas of operation in OpSpec B050, through which, and in which the substitute operation will be conducted.

c) The certificate holder conducting the substitute scheduled operation has the authority in OpSpec C070 to conduct scheduled operations to the airports involved in the substitute operation.

2) A545 is not required for a substitute supplemental operation.

**B. When to Issue A545.** A principal operations inspector (POI) may issue A545 to a certificate holder with the appropriate domestic and/or flag authority who desires to conduct a substitute scheduled operation on behalf of another certificate holder, but does not have the airports involved in the substitute operation listed as airports for scheduled operations in OpSpec C070.

1) **OpSpec C070.** OpSpec C070, Airports Authorized for Scheduled Operations, is where a POI authorizes the list of airports that a certificate holder uses in schedule operations. Certificate holders who conduct regular scheduled operations must ensure that each scheduled airport ground station has the appropriate personnel and facilities to ensure adequate passenger and/or cargo handling, as well as the aircraft ground servicing and maintenance support required by § 121.105. Prior to allowing a certificate holder to list airports in C070, POIs need to consider environmental impacts to each airport. Environmental impact considerations are outlined in FAA Order 8900.1 Volume 11, Chapter 6 and the current edition of FAA Order 1050.1, Environmental Impacts: Policies and Procedures.

2) **OpSpec A545.** If a certificate holder does not have the airports involved in a substitute scheduled operation listed in C070, POIs may authorize a certificate holder to temporarily list airports in A545. Using A545 as an alternative to C070 is permissible, provided the certificate holder for whom the substitute operation is being conducted has the appropriate airport ground station personnel and facilities to support the substitute aircraft. These personnel and facilities must be available and used by the certificate holder conducting the substitute scheduled operation.

**C. Regulatory Requirements for Substitute Operations.** Section 119.53(e) allows a certificate holder who is authorized to conduct part 121 or 14 CFR 135 operations, to conduct a substitute operation on behalf of another certificate holder, under the following conditions:

1) The certificate holder conducting the substitute operation must hold the same Department of Transportation (DOT) Economic Authority as the certificate holder arranging for the substitute operation.

2) The certificate holder conducting the substitute operation must hold the same authority in OpSpec A001 to conduct a kind of operation as the certificate holder arranging for the substitute operation. "Kind of operation" is defined in 14 CFR § 110.2, (e.g., domestic, flag, or supplemental).

3) The certificate holder conducting the substitute operation must conduct that operation in accordance with the same operations authority (scheduled airports and authorized areas of en route operations) held by the certificate holder arranging for the substitute operation.

**D. List Airports in A545.** Section 119.49(a)(4)(ii) prohibits a certificate holder from conducting domestic or flag operations using any airport not listed in its OpSpecs. If an airport is not listed in C070 of a certificate holder's OpSpecs, a POI may authorize a certificate holder to temporarily list an airport in A545 to comply with this regulation. The ability to use A545 as an alternative to C070 is based on the assumption that the certificate holder for whom the substitute scheduled operation is being conducted will provide all of the necessary ground station facilities, as well as passenger and aircraft service and support. When using A545, the certificate holder conducting the substitute scheduled operation is not required to establish its own ground stations. However, the certificate holder conducting the substitute operation is responsible to ensure all aircraft maintenance and performance requirements and limitations are met. List all airports for use in the substitute scheduled operation in Table 1 of A545. Include the origin and destination airports and any alternate or refueling airports necessary to conduct the substitute operation. Any airports already listed in the C070 issued to the certificate holder conducting the substitute operation, do not need to be listed in A545. When listing the origin and destination airports in A545, designate them as "Regular" airports by selecting "Yes" in "Regular Airport" field of A545. Airports not designated as "Regular" are considered interchangeable for use as provisional, refueling, and alternate airports while conducting the substitute scheduled operation.

**E. Conditions and Limitations of A545.** OpSpec A545 contains the following conditions and limitations. POIs may not issue A545 unless the certificate holder is able to meet all of the requirements of the OpSpec.

1) The certificate holder must have authority to conduct domestic or flag operations, as appropriate, listed in A001 of its operations specifications.

2) The certificate holder must comply with all regulations applicable to domestic or flag operations, as applicable, when conducting the substitute scheduled operation.

3) The airports listed in Table 1 of A545 are in addition to the regular, provisional refueling, and alternate airports listed in the certificate holder's C070 and are for use in the temporary substitute operation only.

a) All origin and destination airports must be listed and designated as regular airports in Table 1 of A545.

b) Any airports for use as provisional, refueling, or alternate airports that are not listed in the certificate holder's C070 must be listed in Table 1 of A545.

c) All airports not designated as regular airports are considered to be interchangeable as provisional, refueling, and alternate airports and satisfy the requirements of § 119.49(a)(4)(ii).

4) Airports located in the United States, the District of Columbia, or any territory or possession of the United States must meet the requirements of § 121.590. Airports located outside of the United States, the District of Columbia, or any territory or possession of the United States, must meet requirements equivalent to those contained in § 121.590.

5) The certificate holder must ensure compliance with § 121.549(a) and provide the pilot in command with the appropriate aeronautical charts to conduct the substitute operation.

6) Prior to conducting the substitute operation, the certificate holder must ensure the following:

a) All station facilities are available to sustain adequate ground handling for arrival and departure of the aircraft involved in the substitute operation.

b) Competent personnel, adequate facilities, and adequate equipment (including spare parts, supplies and materials) are available for the proper servicing, maintenance, and preventive maintenance of aircraft and auxiliary equipment.

7) The substitute scheduled operation is limited to 5 consecutive calendar-days.

8) The A545 authorization expires upon conclusion of the substitute scheduled operation, or at the end of the fifth calendar-day from the start date of the operation, whichever is less.

9) Substitute scheduled operations using the regular airports listed in Table 1 of A545 are not permitted more than once in 30 calendar-days.

**F. Recency of Operation in Accordance with § 119.63.** If a certificate holder has not conducted the kind of scheduled operation (domestic or flag) within the preceding 30 consecutive calendar-days before conducting a substitute scheduled operation, the certificate holder must provide the POI with prior notification at least 5 consecutive calendar-days before commencing the substitute scheduled operation.

1) A POI may accept a certificate holder's request for A545 as prior notification, provided it is made at least 5 consecutive calendar-days before the certificate holder intends to conduct the operations.

2) The certificate holder must make itself available and accessible during the 5 consecutive calendar-day period preceding the operation in the event that the POI decides to conduct a full inspection reexamination to determine whether the certificate holder remains properly and adequately equipped to conduct a safe operation.

**G. Archive A545 at the Conclusion of the Operation.** POIs will archive A545 at the conclusion of the substitute operation authorized therein, or at the end of 5 consecutive calendar-days, whichever is less.

### **OPSPEC A570, ONE YEAR EXTENSION OF COMPLIANCE TIMES IN SECTIONS 121.1117(E) AND 129.117.**

#### **A. Applicability.**

1) Except as provided in paragraph C below, OpSpec A570 can only be issued to part 121 certificate holders or part 129 foreign air carriers/foreign persons with U.S.-registered airplanes who notified their PI or CHDO of their intention to use the relief specified in §§ 121.1117(k) or 129.117(k) before March 29, 2009 and who then applied for OpSpec A570 before June 24, 2009. OpSpec A570 is time-limited and will expire on December 26, 2018.

2) OpSpec A570 applies to transport category turbine-powered airplanes with a TC issued after January 1, 1958, that, as a result of original type certification or later increase in capacity have a maximum TC'd passenger capacity of 30 or more, or a maximum payload capacity of 7,500 pounds or more. This authorization does not apply to the airplanes listed in §§ 121.1117(m) and 129.117(k). Specifically, it applies to the airplanes listed in Table 3-23A.

**Table 3-23A. Airplanes Which Require Ground Air Conditioning Systems**

| <b>Boeing</b> | <b>Airbus</b>                 |
|---------------|-------------------------------|
| 737 series    | A318, A319, A320, A321 series |
| 747 series    | A300, A310 series             |
| 757 series    | A330, A340 series             |
| 767 series    |                               |
| 777 series    |                               |

3) OpSpec A570 is used to extend the compliance dates in §§ 121.1117(e) and 129.117(e) by 1 year. In order to be eligible for the extension, a certificate holder or foreign air carrier/ person must have notified their PI or CHDO before March 29, 2009, of its intention to use ground air conditioning systems on its applicable airplanes in accordance with §§ 121.1117(k)(2) and (3) and 129.117(k)(2) and (3), and the certificate holder or foreign air carrier/person must have applied for OpSpec A570 by June 24, 2009. With the issuance of this OpSpec, the compliance date specified in §§ 121.1117(e)(1) and 129.117(e)(1) is extended to December 26, 2015 and the final compliance date is extended to December 26, 2018.

**B. Issuing OpSpec A570.** OpSpec A570 is the joint responsibility of the POI and the PMI. Before issuing OpSpec A570. The office manager of all affected CHDOs, CMOs, IFOs, and IFUs should bring this guidance to the attention of the principal inspectors of any operator who has applied for this OpSpec and ensure that it is properly issued.

1) The PMI must ensure that the certificate holder's manual required by § 121.133 (for part 121) or maintenance program (for part 129) includes a listing, by N-registration number and fleet type, of those airplanes in the certificate holder's fleet that ground conditioned air systems applies to. That listing should be identical to the operator's Flammability Reduction Means (FRM)/Ignition Mitigation Means (IMM) retrofit listing that is provided to the CHDO. As airplanes are retrofitted they should be removed from the list.

2) The POI must ensure that the certificate holder's manual required by § 121.133 (for part 121) or equivalent manual for part 129 includes a requirement for the airplanes in this listing to use ground air conditioning systems for actual gate times of more than 30 minutes, when available at the gate and operational, whenever the ambient temperature exceeds 60 degrees Fahrenheit.

3) The office manager will determine which principal inspector will sign OpSpec A570 and ensure that it is issued.

**C. Certificate Holders Certificated After December 26, 2008.** A certificate holder or foreign air carrier/person for which an operating certificate is issued after December 26, 2008, and that has notified their PI or CHDO of its intention to use ground air conditioning systems on its applicable airplanes (see Table 3-23A above), the compliance date specified in § 121.1117(e) may be extended by one year, provided that the certificate holder meets the requirements of §§ 121.1117(k)(2) or 129.117(k)(2) when its initial OpSpecs are issued and, thereafter, uses ground air conditioning systems as described in § 129.117(k)(2) on each airplane subject to the extension. OpSpec A570 must be approved by the PMI, using the guidance above, concurrent with the initial OpSpecs.

#### **TEMPLATE A999, AIR OPERATOR CERTIFICATE (AOC) IN THE INTERNATIONAL CIVIL AVIATION ORGANIZATION (ICAO) FORMAT.**

**A. Annex 6 Requirements.** Annex 6 to the Chicago Convention requires air operators to carry onboard their aircraft a standardized, certified true copy of their AOCs when operating internationally. See the following ICAO Web site for more information:  
[http://www.icao.int/fsix/\\_Library/Annex%206-Part%20I%20-%20AOC%20Template%20en.pdf](http://www.icao.int/fsix/_Library/Annex%206-Part%20I%20-%20AOC%20Template%20en.pdf)  
. Template A999 is applicable to part 121 and 135 air carriers.

**B. Federal Aviation Administration (FAA) Role.** To enable certificate holders to fulfill this ICAO requirement, the FAA made an ICAO standardized AOC available as Template A999 in the Web-based Operations Safety System (WebOPSS). (See Figure 2-9A in Volume 2, Chapter 1, Section 4 for a sample of Template A999.) Much of the data contained in the AOC will be preloaded from WebOPSS. The principal operations inspector (POI) or the certificate holder must enter some of the data. This standardized ICAO AOC is in addition to the FAA

Operating Certificate or Air Carrier Certificate. For compliance with Annex 6, certificate holders must carry this ICAO AOC onboard their aircraft when operating internationally.

**C. Specific Guidance for Issuing Template A999.** For specific guidance on issuing Template A999, see Volume 2, Chapter 1, Section 4, Preparation of Federal Aviation Administration Operating Certificates, paragraph 2-74.

**RESERVED.** Paragraphs 3-738 through 3-815.

**VOLUME 3 GENERAL TECHNICAL ADMINISTRATION****CHAPTER 19 TRAINING PROGRAMS AND AIRMAN QUALIFICATIONS****Section 1 Scope, Concepts, and Definitions****3-1071 TRAINING PROGRAM OVERVIEW.**

**A. Flightcrew Member Training Programs.** This chapter contains direction and guidance to be used by Federal Aviation Administration (FAA) personnel responsible for the evaluation, approval, and surveillance of Title 14 of the Code of Federal Regulations (14 CFR) part 121 and part 135 flightcrew member training programs. This section contains concepts and definitions that are used throughout the chapter:

- Section 2 addresses the training program approval process;
- Section 3 addresses basic indoctrination curriculum segments;
- Section 4 addresses emergency training curriculum segments;
- Section 5 addresses ground training curriculum segments;
- Section 6 addresses flight training curriculum segments;
- Section 7 addresses qualification curriculum segments;
- Section 8 addresses special curriculum segments;
- Section 9 addresses differences training;
- Section 10 addresses recurrent training;
- Section 11 addresses requalification training; and
- Section 12 addresses related aircraft designations, training, and deviations for part 121.

NOTE: Unless otherwise specified in this chapter, the term “operator” applies equally to an applicant for a certificate and an existing certificate holder.

**B. Operator Training Program Development.** An applicant for an air carrier certificate or operating certificate is required to develop a training program. An existing operator may need to revise its training program when purchasing new equipment, operating in a new environment, or obtaining new authorizations, or when new FAA requirements are specified. These new or revised training requirements must be incorporated into the operator’s training program. Each part 121 and part 135 operator (with the exception of a part 135 operator limited to a single pilot or a single pilot in command (PIC)) must obtain FAA approval of the curricula used for training flightcrew members, instructors, check pilots, and check Flight Engineers (FE). The operator is responsible for ensuring that its training program is complete, current, and in compliance with the regulations.

**C. Operator Contracting with Training Providers.**

1) Entities other than the certificate holder (other certificate holders or 14 CFR part 142 training centers) may train, test, or check that certificate holder’s flightcrew members, instructors, check pilots, and check FEs, provided that:

- a) There is a preexisting contractual or other arrangement;
- b) That arrangement is in the primary certificate holder's FAA-approved training program; and
- c) The training, testing, and checking is conducted in accordance with the primary certificate holder's approved training program.

2) Guidance for outsource training can be found in Volume 3, Chapter 54, Section 5. Guidance for the issuance of Operations Specification (OpSpec) A031, Contract Training, authorizing such arrangements can be found in Volume 3, Chapter 18, Section 3.

**D. Operator Training Program Approval.** It is the policy of the Flight Standards Service (AFS) to encourage operators to be innovative and creative when developing training methods and techniques. Principal operations inspectors (POI) are responsible for ensuring that regulatory requirements are met and that the operator's flightcrew members can competently perform their assigned duties before they are authorized to enter revenue service. Meeting regulatory requirements is paramount, but POIs should also embrace innovation in training delivery techniques. POIs should work collaboratively with their assigned carrier to explore new training techniques while also ensuring the carrier validates the results of any alternative techniques.

**3-1072 DEFINITIONS.** The following terms are used throughout this chapter and are defined as follows:

**A. Aircraft Evaluation Group (AEG).** FAA organization that sets training, checking, currency, type rating, Master Minimum Equipment List (MMEL), and maintenance standards for assigned certificated aircraft types. AEGs also address operational aspects of aircraft type certification and resolution of service difficulties.

**B. Base Aircraft.** An aircraft identified by a certificate holder for use as a reference to compare differences with another aircraft.

**C. Categories of Training.** A classification of training based on the previous qualification of the flightcrew member. Categories of training consist of one or more curricula. The categories of training are initial new-hire, initial equipment, transition, upgrade, recurrent, and requalification.

**D. Checking and Qualification Modules.** An integral part of a qualification curriculum segment, which contains checking and qualification requirements specified under part 121 or part 135. For example, a qualification curriculum segment may contain a proficiency check module, a Line-Oriented Flight Training (LOFT) module, an Operating Experience (OE) module, and a consolidation of knowledge and skills module.

**E. Common Type Rating.** Common type rating is a term used in Flight Standardization Board (FSB) reports to describe a relationship between type ratings for aircraft with different type certificates (TC) that have no greater than level D training differences. See subparagraph GG for type rating.

**F. Consolidation of Knowledge and Skills.** A process by which a pilot, through practice and practical experience, increases proficiency in newly acquired knowledge and skills.

**G. Courseware.** Instructional material developed for each curriculum. This is information in lesson plans, instructor guides, computer software programs, audiovisual programs, workbooks, aircraft operating manuals, and handouts. Courseware must accurately reflect curriculum requirements, be effectively organized, and properly integrate with instructional delivery methods.

**H. Currency.** The experience necessary, within a specified period of time, for the safe operation of aircraft, equipment, and systems. Currency may include, but is not limited to, recent experience.

**I. Curriculum.** A complete training agenda specific to an aircraft type, a flightcrew member duty position, and a category of training. An example is an “initial new-hire, Boeing 727 Flight Engineer (FE) curriculum.” Each curriculum consists of several curriculum segments.

**J. Curriculum Segment.** The largest subdivision of a curriculum containing broadly related training subjects and activities based on regulatory requirements. Curriculum segments are logical subdivisions of a curriculum, which can be separately evaluated and individually approved. Examples are a ground training segment and a flight training segment. Each curriculum segment consists of one or more training modules.

**K. Designated Related Aircraft.** Any two or more aircraft of the same make with different TCs that have been designated as related by the Air Transportation Division (AFS-200) based upon request from the part 121 operator. This designation may allow credit between those aircraft to be applied for training, checking, recent experience, OE, operating cycles, and line operating flight time for consolidation of knowledge and skills. See subparagraph Y for related aircraft. See Volume 3, Chapter 19, Section 12, for additional information regarding related aircraft designation.

**L. Duty Position.** The functional or operating position of a crewmember or aircraft dispatcher. For parts 121 and 135 operations, duty positions are PIC, second in command (SIC), FE, flight attendant (F/A), and aircraft dispatcher.

**M. Element.** An integral, subject-oriented (not task-oriented) part of a training, checking, or qualification module. For example, an electrical power ground training module may include such elements as a direct current (DC) power system, an alternating current (AC) power system, and circuit protection.

**N. Eligibility Period.** Three calendar-months (the calendar-month before the training/checking month, the training/checking month, and the calendar-month after the training/checking month). During this period a flightcrew member must satisfactorily complete the required recurrent ground or flight training, flight check, proficiency check, competency check, or line check to remain in a qualified status. Training or checking completed during the eligibility period is considered to be completed during the training/checking month.

**O. Event.** An integral, task-oriented part of a training, checking, or qualification module that requires the use of a specific procedure or procedures. A training event provides a student an opportunity for instruction, demonstration, and/or practice using specific procedures. A checking or qualification event provides an evaluator the opportunity to evaluate a student's ability to correctly accomplish a specific task without instruction or supervision.

**P. Final Approval.** An FAA letter without an expiration date that authorizes an operator to continue training in accordance with a specific curriculum or curriculum segment. Final approval involving arrangements with other certificate holders or part 142 training centers must include the issuance of OpSpec A031.

**Q. Flight Standardization Board (FSB).** An FSB is a designated group of operations inspectors who determine type rating, certification, and training and qualification requirements for new or related aircraft. An FSB is usually established for large turbojet and turbopropeller aircraft, Special Federal Aviation Regulation (SFAR) No. 41 airplanes, and 14 CFR part 23 commuter category airplanes. An FSB is not usually established for 14 CFR parts 23 and 27 aircraft, unless the aircraft have unique design, flight, or handling characteristics.

**R. Flight Standardization Board (FSB) Report.** The FSB issues a report after evaluating any new or related aircraft. The FSB report contains minimum training and qualification requirements for the aircraft and any related aircraft. The FSB report also contains any special training requirements for that aircraft type.

**S. Initial Approval.** An FAA letter that conditionally authorizes an operator to begin training under a specific curriculum or curriculum segment pending an evaluation of training effectiveness. An initial approval letter must specify an expiration date for the conditional authorization. Initial approval involving arrangements with other certificate holders or part 142 training centers must include the issuance of OpSpec A031.

**T. Instructional Delivery Methods.** Methodology for conveying information to a student. This may include lectures, demonstrations, audiovisual presentations, programmed and directed self-study workshops, and drills. Ground training devices (GTD), flight simulation training devices (FSTD), aircraft, and computer workstations are also considered instructional delivery methods.

**U. Modular Training.** The concept of program development in which logical subdivisions of training programs are developed, reviewed, approved, and modified as individual units. Curriculum segments and modules may be used in multiple curricula. The modular approach allows great flexibility in program development and reduces the administrative workload on both operators and instructors in the development and approval of these programs.

**V. Planned Hours—Part 135.** Part 135 does not require programmed hours to be defined within training programs. The hours associated with these programs are typically referred to as planned hours to avoid confusion with the requirements of part 121. Part 135 does, however, require each instructor, supervisor, or check pilot to certify the proficiency and knowledge of each flightcrew member upon completion of required training or evaluation. This certification may occur at any time when the instructor believes that the individual has

reached the required level of proficiency during his or her scheduled training, provided that all elements and events of the approved training program have been successfully trained.

**W. Programmed Hours—Part 121.** In accordance with part 121, § 121.403, each curriculum must include the programmed hours that the certificate holder will apply to the training. For initial new-hire, initial equipment, and recurrent categories, part 121 subpart N specifies the minimum programmed hours that each curriculum must include, unless reduced in accordance with § 121.405. Although part 121 subpart N does not specify minimum programmed hours for the other categories of training, the certificate holder must still include programmed hours in each curriculum.

**X. Recent Experience.** With respect to pilot flightcrew members, the flight experience required by § 121.439 or part 135, § 135.247. With respect to FEs, the flight experience required by § 121.453.

**Y. Related Aircraft.** Any two or more aircraft of the same make with either the same or different TCs that have been demonstrated and determined by the Administrator to have commonality.

**Z. Related Aircraft Differences Training.** The flightcrew member training for aircraft with different TCs that have been designated as related by AFS-200. (See Volume 3, Chapter 19, Section 12, for additional information regarding related aircraft differences training.)

**AA. Testing and Checking.** Methods for evaluating students as they demonstrate a required level of knowledge in a subject and, when appropriate, apply the knowledge and skills learned in instructional situations to practical situations.

**BB. Training Hours.** The total amount of time necessary to complete the training required by a curriculum segment. This must provide an opportunity for instruction, demonstration, practice, and testing (as appropriate). This time must be specified in hours on the curriculum segment outline. For part 121, these are the programmed hours. For part 135, these hours are typically referred to as planned hours. A training hour includes time for normal breaks, usually 10 minutes each hour. Lunch breaks are not included.

**CC. Training Module.** A subpart of a curriculum segment that constitutes a logical, self-contained unit. A module contains elements or events that relate to a specific subject. For example, a ground training curriculum segment could logically be divided into modules pertaining to aircraft systems (such as hydraulic, pneumatic, and electrical). As another example, a flight training curriculum segment is normally divided into flight periods, each of which is a separate module. A training module includes the outline, appropriate courseware, and the instructional delivery methods. It is usually, but not necessarily, completed in a single training session.

**DD. Training Program.** A system of instruction that includes curricula, facilities, FSTDs, training equipment, instructors, check pilots and check FEs, courseware, instructional delivery methods, and testing and checking procedures. This system must satisfy the training program requirements of part 121 or part 135 and ensure that each flightcrew remains adequately trained for each aircraft, duty position, and kind of operation in which the person serves.

**EE. Training/Checking Month (Base Month).** The calendar-month during which a flightcrew member is due to receive required recurrent ground or flight training, a required flight check, a required proficiency check, a required competency check, or a required line check. Calendar-month means the first day through the last day of a particular month.

**FF. Type Certificate (TC).** An aircraft type includes all aircraft that are similar in design produced under a single TC issued, according to 14 CFR part 21 subpart B. Each aircraft type must have a TC before it can be used in air transportation. Aircraft TC determinations are established by an Aircraft Certification Office (ACO).

**GG. Type Rating.** A pilot type rating is an endorsement on a pilot certificate. It is an authorization to serve as PIC of a large (over 12,500 pounds gross takeoff weight (GTOW)) aircraft, a turbojet aircraft, or other aircraft when determined necessary by the Administrator. A type rating is assigned to a single aircraft type, typically make and model (e.g., B-757). However, in some cases, a different series of the same model may require a different type rating. For example, the B-747-100, -200, and -300 series require one type rating (B-747), but the B-747-400 and -800 require a different type rating (B-747-4). An aircraft that has commonality with another aircraft may be assigned a type rating that is considered in common with another type rating (e.g., B-757 and B-767).

**3-1073 AIRCRAFT FAMILIES.** There are five basic families of aircraft used in parts 121 and 135 operations. Aircraft are grouped into families according to their performance and flight characteristics to simplify development of training programs. The ground and flight training requirements for flightcrew members are significantly different for each family of aircraft. Within each aircraft family, however, the ground and flight training requirements are similar, even though individual aircraft may be quite different in construction and appearance. The five families of aircraft are as follows:

- Transport category and commuter category airplanes;
- Multiengine turbopropeller and SFAR airplanes;
- Multiengine general purpose airplanes;
- Single-engine general purpose airplanes; and
- Helicopters.

**A. Transport Category and Commuter Category Airplane Family.** The transport category and commuter category airplane family includes all airplanes certified under 14 CFR part 25 (and predecessor rules such as Civil Air Regulations (CAR) 4, 4a, and 4b and Special CAR Nos. SR-422, SR-422A, and SR-422B) and those few turbojet airplanes certified under 14 CFR part 23. This family of airplanes also includes those few large airplanes of 30 or more passenger seats certified under Aeronautics Bulletin 7a (DC-3, L-18, C-46) known as large, nontransport airplanes when operated in revenue service. This aircraft family also includes those airplanes certified under part 23 in the commuter category.

**B. Multiengine Turbopropeller and SFAR Airplane Family.**

1) This aircraft family consists of multiengine turbopropeller airplanes (except those multiengine turbopropeller airplanes included in the transport category and commuter category

airplane family) and those airplanes certified under part 23 in the normal category. This family does not include single-engine turbopropeller airplanes.

2) For the purposes of the flight competency check required by § 135.293(b), type, as to an airplane, means any one of a group of airplanes determined by the FAA to have a similar means of propulsion, the same manufacturer, and no significantly different handling or flight characteristics. For example, a pilot who completes a flight competency check in airplane A is not required to complete a flight competency check in airplane B if the FAA has determined that airplane A and airplane B are in the same group. Table 3-33, Multiengine Turbopropeller and SFAR Airplane Groups for the Purposes of the § 135.293(b) Competency Check, lists the specific makes and models in this aircraft family that the FAA has determined belong to the same group.

NOTE: In cases where an operator requests approval to use one or more FSTDs, each FSTD must accurately replicate the specific make, model, and series (M/M/S) of the operator's aircraft as closely as possible in order to minimize required differences training and provide the best quality of training possible. In accordance with §§ 135.335 and 121.407, each FSTD must be specifically approved for the operator's use. Typically, this is accomplished by including a listing of each approved device in the operator's training program.

**Table 3-33. Multiengine Turbopropeller and SFAR Airplane Groups for the Purposes of the § 135.293(b) Competency Check**

| <b>Group</b>                      | <b>Models</b>                  |
|-----------------------------------|--------------------------------|
| Beechcraft Turbopropeller         | B65-A90, 90, 99, 100, and 200. |
| Cessna Turbopropeller             | Of the 400 Series.             |
| Piper                             | Cheyenne Series.               |
| Rockwell Commander Turbopropeller | 680T, 690V, 680W, and 690.     |
| Fairchild                         | SA 226-227 Series.             |

### **C. Multiengine General Purpose Airplane Family.**

1) This aircraft family includes all multiengine airplanes certified for operations with nine or fewer passenger seats and not more than 12,500 pounds maximum takeoff weight (MTOW). It does not include any airplanes certified in the transport or commuter category regardless of the MTOW. Pilots operating airplanes in this family must have similar knowledge, skills, and abilities to operate them under part 135. For example, a pilot operating an airplane within this family may be required to have diversified training in short- and soft-field landings, but is not required to have training in  $V_1$  cuts. This type of operation may require specific training, such as seaplane operations.

2) For the purposes of the flight competency check required by § 135.293(b), type, as to an airplane, means any one of a group of airplanes determined by the FAA to have a similar means of propulsion, the same manufacturer, and no significantly different handling or

flight characteristics. For example, a pilot who completes a flight competency check in airplane A is not required to complete a competency check in airplane B if the FAA has determined that airplane A and airplane B are in the same group. Table 3-34, Multiengine General Purpose Airplane Groups for the Purposes of the § 135.293(b) Competency Check, lists the specific makes and models in this aircraft family that the FAA has determined belong to the same group.

**Table 3-34. Multiengine General Purpose Airplane Groups for the Purposes of the § 135.293(b) Competency Check**

| <b>Group</b>                     | <b>Models</b>                          |
|----------------------------------|--|
| Beechcraft Reciprocating         | B50, 55, 56, 57, 58, 60, 70, and 95.   |
| Cessna Reciprocating             | C310, 320, 340, and 400 Series.        |
| Cessna                           | 336 and 337.                           |
| Piper Reciprocating              | PA-23, PA-30, PA-31, PA-34, and PA-39. |
| Rockwell Commander Reciprocating | 500, 560, 680, 685, and 720.           |

**D. Single-Engine General Purpose Airplane Family.** This aircraft family includes all single-engine airplanes of not more than 12,500 pounds MTOW, other than turbine-powered airplanes. Pilots operating airplanes in this family must have similar knowledge, skills, and abilities to operate them under part 135. For example, pilots operating single-engine airplanes are required to have training that applies to all airplanes in this group, such as forced landing procedures. The type of operation may require specific training, such as seaplane or skiplane training.

**E. Helicopter Family.** This aircraft family includes all helicopters. Helicopter operations under part 135 require similar knowledge, skills, and abilities. General training requirements for this family of aircraft include such events as autorotation and anti-torque failure. The type of operation may require specific training in events such as high-altitude landings or Airborne Radar Approach (ARA) procedures.

NOTE: There are other types of aircraft, such as single-engine turbopropeller, which do not fit in the five families of aircraft. Each of these types of aircraft require separate training programs.

**3-1074 TRAINING PROGRAMS: A SCHEMATIC DEPICTION.** Figure 3-68, Schematic Depiction of Training Programs, shows the relationship between the total training program and the categories of training, curricula, curriculum segments, and training modules.

**A. Modular Approach.** The illustration in Figure 3-68 is only representative and is intended to present a framework for the modular development of a training program. By using this modular approach, the POI has various strategies available for the evaluation of training effectiveness and the planning of long-term surveillance. These strategies are discussed in Section 2 of this chapter.

**B. Parts of the Training Program Depiction.** The illustration in Figure 3-68 consists of the following five parts:

1) Part A depicts representative components which, when combined, constitute an operator's overall training program. These components differ in that some must be specifically approved by the FAA (e.g., check pilots), while others are accepted as essential supporting elements (e.g., facilities).

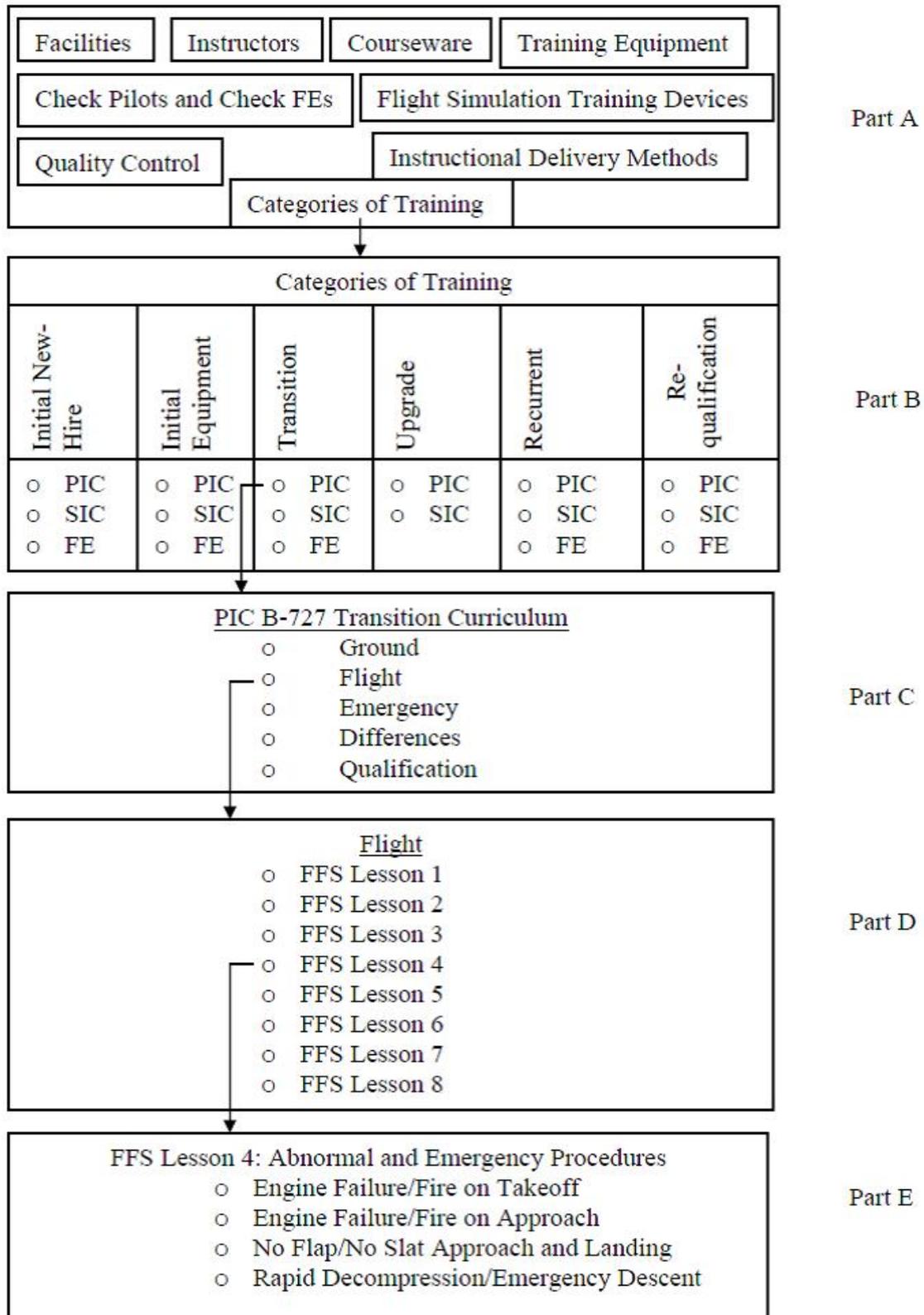
2) Part B illustrates the six categories of training that are recognized by the FAA.

3) Part C is an example of a curriculum that is a complete agenda of training specific to an aircraft type and flightcrew member duty position. This example depicts a PIC B-727 transition training curriculum.

4) Part D is an example of a specific curriculum segment and shows that it consists of several training modules. This example is the flight training curriculum segment of the PIC B-727 transition training curriculum.

5) Part E is an example of a specific training module. In this case the module is full flight simulator (FFS) lesson number four.

**Figure 3-68. Schematic Depiction of Training Programs**



**3-1075 CATEGORIES OF TRAINING.** There are six basic categories of training applicable to part 121 and part 135 operators. The primary factors that determine the appropriate category of training are the student's previous experience with the operator and previous duty position with the operator. Each category of training consists of one or more curricula, each of which is specific to an aircraft type and a duty position (e.g., B-727 FE, B-727 SIC, and B-727 PIC). Training should be identified with and organized according to specific categories of training. When discussing training requirements, FAA inspectors should be specific regarding the category of training being discussed and use the nomenclature described in this order. POIs should encourage operators to use this nomenclature when developing new training curricula or revising existing training curricula. Use of this common nomenclature improves standardization and mutual understanding. The six categories of training are briefly discussed in the following subparagraphs.

**A. Initial New-Hire Training.** This training category is for personnel who have no previous experience with the operator (newly hired personnel). It also applies, however, to personnel employed by the operator who have not previously held a flightcrew member duty position with that operator. Initial new-hire training includes basic indoctrination training and training for a specific duty position and aircraft type. Except for a basic indoctrination curriculum segment, the regulatory requirements for initial new-hire and initial equipment training are the same. Since initial new-hire training is usually the employee's first exposure to specific company methods, systems, and procedures, it must be the most comprehensive of the six categories of training. For this reason, initial new-hire training is a distinct, separate category of training and should not be confused with initial equipment training. As defined by this handbook, initial equipment training is a separate category of training.

**B. Initial Equipment Training.** This category of training is for personnel who have been previously trained and qualified for a flightcrew member duty position by the operator (not new hires) and who are being reassigned for any of the following reasons:

1) For part 121 operations, the flightcrew member is being reassigned in one of the following circumstances:

a) Reassignment is to any flightcrew member duty position on an airplane of a different group (as defined by § 121.400, Group I is reciprocating and turbopropeller-powered and Group II is turbojet-powered). For example, a PIC on a DHC-8 is reassigned as a PIC on a B-717.

b) Reassignment is to a different flightcrew member duty position on a different airplane type, and the flightcrew member has not been previously trained and qualified by the operator for that duty position and airplane type. For example, an SIC on a B-737 is reassigned as a PIC on a B-757.

2) For part 135 operations, reassignment is to a different flightcrew member duty position on a different aircraft type, and the flightcrew member has not been previously trained and qualified by the operator for that flightcrew member duty position and aircraft type. For example, an SIC on a Cessna 400 series is reassigned as a PIC on a Beechcraft 200.

**C. Transition Training.** This category of training is for a flightcrew member who has been previously trained and qualified for a specific flightcrew member duty position by the operator and who is being reassigned to the same flightcrew member duty position on a different aircraft type. For example, an SIC on a B-737 is reassigned as an SIC on an A-320. For part 121 operations, the different type aircraft must be in the same group. If the different aircraft is not in the same group, initial equipment training is the applicable category of training.

**D. Upgrade Training.** This category of training is for a flightcrew member who has been previously trained and qualified as either SIC or FE by the operator and is being reassigned as either PIC or SIC, respectively, to the same aircraft type for which the flightcrew member was previously trained and qualified. For example, an SIC on a G-V is reassigned as a PIC on a G-V.

**E. Recurrent Training.** This category of training is for a flightcrew member who has been trained and qualified by the operator, who will continue to serve in the same duty position and aircraft type, and who must receive recurring training and/or checking within an appropriate eligibility period.

**F. Requalification Training.** This category of training is for a flightcrew member who has been trained and qualified by the operator but has become unqualified to serve in a particular flightcrew member duty position on an aircraft type due to not having received recurrent ground or flight training and/or a required proficiency check, flight check, line check, or competency check within the appropriate eligibility period. Requalification training is also applicable in the following situations:

- PICs who are being reassigned as SICs on the same aircraft type when seat-dependent training is required; and
- PICs and SICs who are being reassigned as FEs on the same aircraft type provided they were previously qualified as FEs on that aircraft type. If the PIC or SIC was not previously qualified as an FE on that aircraft type, initial equipment training is the applicable category of training.

**G. Summary of Categories of Training.** The categories of training are summarized in general terms as follows:

- 1) All personnel not previously employed by the operator as a flightcrew member must complete initial new-hire training.
- 2) All personnel must complete recurrent training for the duty position and aircraft type for which they are currently assigned within the appropriate eligibility period.
- 3) All personnel who have become unqualified for a duty position on an aircraft type with the operator must complete requalification training to reestablish qualification for that duty position and aircraft type.
- 4) All personnel who are being reassigned by the operator to a different duty position and/or aircraft type must complete initial equipment, transition, upgrade, or requalification training, depending on the aircraft type and duty position for which they were previously qualified.

NOTE: Figure 3-69, Categories of Training in Part 121 Operations, and Table 3-35, Categories of Training in Part 135 Operations, summarize these categories of training for part 121 and part 135, respectively. These tables indicate the appropriate category of training for normal flightcrew member progression or reassignment. They may not address certain situations. The guidance in this paragraph and the requirements of appropriate regulations must be followed when the tables do not address such situations.

**Table 3-35. Categories of Training in Part 135 Operations**

|                             |       | New Duty Position |       |       |       |
|-----------------------------|-------|-------------------|-------|-------|-------|
|                             |       | PIC 1             | PIC 2 | SIC 1 | SIC 2 |
| Current<br>Duty<br>Position | PIC 1 | ---               | T     | R     | I     |
|                             | SIC 1 | U                 | I     | ---   | T     |

Table key:

1 = a specific aircraft type (different from 2)

2 = a specific aircraft type (different from 1)

I = initial equipment training

R = requalification training

T = transition training

U = upgrade training

Examples:

- Current duty position is pilot in command (PIC) on aircraft type 1. Person is assigned to new duty position as PIC on aircraft type 2. Transition training is required.
- Current duty position is second in command (SIC) on aircraft type 1. Person is assigned to PIC duty position on aircraft type 1. Upgrade training is required.

**Figure 3-69. Categories of Training in Part 121 Operations**

|                       |        | New Duty Position |        |        |        |        |        |        |        |       |       |       |       |
|-----------------------|--------|-------------------|--------|--------|--------|--------|--------|--------|--------|-------|-------|-------|-------|
|                       |        | PIC 1A            | PIC 1B | PIC 2A | PIC 2B | SIC 1A | SIC 1B | SIC 2A | SIC 2B | FE 1A | FE 1B | FE 2A | FE 2B |
| Current Duty Position | PIC 1A | ---               | T      | I      | I      | R      | I      | I      | I      | R/I   | I     | I     | I     |
|                       | PIC 2A | I                 | I      | ---    | T      | I      | I      | R      | I      | I     | I     | R/I   | I     |
|                       | SIC 1A | U                 | I      | I      | I      | ---    | T      | I      | I      | R/I   | I     | I     | I     |
|                       | SIC 2A | I                 | I      | U      | I      | I      | I      | ---    | T      | I     | I     | R/I   | I     |
|                       | FE 1A  | I                 | I      | I      | I      | U      | I      | I      | I      | ---   | T     | I     | I     |
|                       | FE 2A  | I                 | I      | I      | I      | I      | I      | U      | I      | I     | I     | ---   | T     |

Table key:

1A = a specific Group I airplane type (different from 1B)

1B = a specific Group I airplane type (different from 1A)

2A = a specific Group II airplane type (different from 2B)

2B = a specific Group II airplane type (different from 2A)

I = initial equipment training

R = requalification training

T = transition training

U = upgrade training

R/I = requalification training if previously qualified for the duty position on that airplane type or initial equipment training if not previously qualified for the duty position on that airplane type.

Examples:

- Current duty position is pilot in command (PIC) on airplane type 1A. Person is assigned to new duty position as PIC on airplane type 1B. Transition training is required.
- Current duty position is second in command (SIC) on airplane type 1A. Person is assigned to PIC duty position on airplane type 1A. Upgrade training is required.
- Current duty position is PIC on airplane type 2A. Person is assigned to new duty position as PIC on airplane type 1B. Initial equipment training is required.
- Current duty position is PIC on airplane type 2A. Person is assigned to new duty position as Flight Engineer (FE) on airplane type 2A. If the person was previously qualified as FE on airplane type 2A, then requalification training is required. If the person was not previously qualified as FE on airplane type 2A, then initial equipment training is required.

**3-1076 APPLICABILITY OF TRAINING CATEGORIES.** Usually, operators will need to conduct training in all six categories of training. Recurrent training applies to all operators. Initial equipment training, transition training, upgrade training, and requalification training apply in most situations. However, transition training is not applicable for an operator who operates only one aircraft type. Initial new-hire training applies to operators who train and qualify newly hired personnel or personnel who have not been previously qualified as flightcrew members by that operator.

**3-1077 CURRICULUM DEVELOPMENT.** Operators must develop one or more curricula for each category, specific duty position, and aircraft type in which the operator conducts training.

**A. Required Curricula.** The operator is required to develop and maintain only those curricula that will be used. For example, if an operator specifies that all newly hired pilots must be trained first as B-727 FEs, the appropriate curriculum for that category of training would be B-727 FE initial new-hire training. The operator would not be required to develop any initial new-hire pilot training curricula for other aircraft or duty positions. Another example would be if a part 135 operator specifies that all newly hired pilots must be trained first as SICs on the BE-99, then only a BE-99 SIC initial new-hire training curriculum would need to be developed and maintained.

**B. Single-Engine General Purpose Airplanes.** A part 135 operator may include all makes and models of airplanes of the single-engine general purpose family in a single curriculum for each category and duty position, provided the curriculum includes airplane-specific training for each make and model. For example, a single-engine PIC initial new-hire training curriculum may include both Cessna 172 and Piper PA-28 airplanes, provided the curriculum includes training on the specifics for each make and model (e.g., operating limitations, systems, and performance).

NOTE: Single-engine turbine-powered airplanes are not included in the single-engine general purpose family. A separate curriculum is required for each type of single-engine turbine-powered airplane.

**C. Multiengine General Purpose Airplanes.** A part 135 operator may include all multiengine general purpose airplanes that have been determined to be in the same group in a single curriculum for each category and duty position, provided the curriculum includes airplane-specific training for each model. (See Table 3-34 for the airplanes in this family that the FAA has determined belong to the same group.) For example, a Cessna multiengine reciprocating PIC initial equipment curriculum may include both the Cessna 310 and Cessna 320, provided the curriculum includes training on the specifics for each airplane type (e.g., operating limitations, systems, and performance).

**D. Multiengine Turbopropeller and SFAR Airplanes.** A part 135 operator may include all multiengine turbopropeller or SFAR airplanes that have been determined to be in the same group in a single curriculum for each category and duty position, provided the curriculum includes airplane-specific training for each model. (See Table 3-33 for the airplanes in this family that the FAA has determined belong to the same group.) For example, a Beechcraft

multiengine turbopropeller PIC transition curriculum may include both the Beechcraft 100 and Beechcraft 200, provided the curriculum includes training on the specifics for each airplane type (e.g., operating limitations, systems, and performance).

**E. Transport Category and Commuter Category Airplanes.** An operator must develop a curriculum for each airplane type in the transport category and commuter category family. An operator may include all models of a specific airplane type in a single curriculum for each category and duty position. Operators must provide differences training to qualify crewmembers in different models, series, or variants of the same airplane type.

**F. Helicopters.** An operator must develop a curriculum for each helicopter type. An operator may include all models of a specific helicopter type in a single curriculum for each category and duty position. Operators must provide differences training to qualify crewmembers in different models, series, or variants of the same helicopter type.

**G. Curriculum Outlines.** Curriculum outlines are documents used by operators to specify the curriculum content. Outlines must contain at least the information specified in Volume 3, Chapter 19, Section 2. This information is required so that the POI can determine whether the operator's curriculum meets regulatory requirements during phase three of the approval process (see Volume 3, Chapter 19, Section 2). Curriculum outlines should contain enough detail so that lesson plans can later be constructed from them. Detailed information should be placed in lesson plans, training manuals, and other documents maintained by the operator. This material is reviewed during phase four of the approval process (see Volume 3, Chapter 19, Section 2).

**H. Curriculum Segments.** Curriculum segments that make up a curriculum depend upon the category of training and the duty position. Curriculum segments are titled as follows:

- Basic Indoctrination—§ 121.415(a)(1) or § 135.329(a)(1);
- Crew Resource Management Training—§ 135.330;
- Aircraft Ground Training—§ 121.419 or § 135.345;
- Emergency Training—§§ 121.417 and 121.805 or § 135.331;
- Flight Training—§ 121.424, § 121.425, part 121 appendix E, part 121 appendix H, or § 135.347;
- Differences Training—§ 121.418(a) or § 135.341(b)(4);
- Related Aircraft Differences Training—§ 121.418(b);
- Special Curriculum Segment—various rules depending on the operation;
- Hazardous Materials (Will-Carry or Will-Not-Carry)—§§ 121.1001 through 121.1007, part 121 appendix O, or §§ 135.501 through 135.507, part 121 appendix O; and
- Qualification Segment—part 121 subpart O, part 121 appendix F, or part 135 subparts E and G.

**I. Completion Requirements.** Each person required to train under a curriculum must complete that curriculum in its entirety. Each student must satisfactorily complete all curriculum segments prescribed by an approved training curriculum. When a person has completed the

training and checking specified by a curriculum, that person is qualified to serve in a specific duty position on a specific aircraft type.

**3-1078 MULTIPLE CURRICULA OF A SINGLE CATEGORY.** Operators may develop and have multiple curricula approved for any single duty position and aircraft type. These curricula may have different programmed or planned hours based on the flightcrew member's previous knowledge and skill. For example, a part 135 operator may develop initial new-hire training curricula for:

- Pilots that have previous experience in part 135 operations in the same aircraft type and flightcrew member duty position;
- Pilots that have previous experience in part 135 operations in the same aircraft type, but in a different flightcrew member duty position;
- Pilots that have previous experience in part 135 operations in a different aircraft type; or
- Pilots that have previous experience in 14 CFR part 91 subpart K (part 91K) operations.

**NOTE:** In these examples, each curriculum would have different programmed or planned hours to reflect the flightcrew member's level of knowledge and skill related to the certificate holder's operation or aircraft. Regardless of an individual's previous qualifications, it is the operator's responsibility to ensure that each individual is proficient and fully qualified in the operator's procedures and operations prior to authorizing the individual to operate as a required flightcrew member.

**A. Prerequisites.** Operators that choose to develop multiple curricula must clearly specify the prerequisites for entry into each specific curriculum. Examples of prerequisites include the following:

- Documentation of a competency check within the last 12 calendar-months;
- Minimum total flight-hours;
- Minimum flight-hours in type or class, as appropriate; and
- Documentation of experience as a flightcrew member in operations under the same part.

**NOTE:** The flightcrew member's permanent training record must include a certification and record that verifies that the flightcrew member meets or exceeds the prerequisites of the reduced training hour curriculum. When the operator enters the certification in a computerized recordkeeping system, the certifying company official who made the determination must be identified with that entry.

**B. Limitations—Part 135.** Reduced training hour curricula may be developed for initial new-hire, initial equipment, transition, or upgrade training, and must contain all the elements and events of the full curriculum. Reductions may be made in planned hours for aircraft-specific systems ground training and/or flight training based on a crewmember's previous knowledge and

skill. However, reductions in planned hours based on a crewmember's previous knowledge or skill may not be made for certificate-holder-specific modules, including, but not limited to:

- 1) Basic indoctrination (§ 135.329).
- 2) Hazardous materials (hazmat) (§ 135.505), except as provided for in § 135.505(c), if the flightcrew member works for more than one certificate holder concurrently.
- 3) Emergency training (§ 135.331).
- 4) Crew Resource Management (CRM) training (§ 135.330).
- 5) Other certificate-holder-specific modules, such as those required by a certificate holder's OpSpecs or those determined by the certificate holder's POI.

NOTE: Reductions may not be made to the planned hours for any portion of recurrent training (except for hazmat, as provided for in § 135.505(c), if the flightcrew member works for more than one certificate holder concurrently).

NOTE: An individual must also satisfactorily complete the certificate holder's evaluation and qualification modules (e.g., required written/oral exams, competency and proficiency checks, line checks, and OE) before the certificate holder assigns him or her as a required flightcrew member. Reductions may not be made to the evaluation and qualification modules.

**C. Limitations—Part 121.** Reduced training hour curricula may be developed for initial new-hire, initial equipment, transition, or upgrade training, and must contain all the elements and events of the full curriculum. Reductions in programmed hours must be approved by the POI in accordance with § 121.405. See Volume 3, Chapter 19, Sections 3, 5, and 6, for additional information regarding reductions in programmed hours for part 121.

**D. Flightcrew Members Employed by Multiple Operators.** A flightcrew member who is employed (directly or by contract) by multiple operators concurrently must complete the applicable training curricula, including recurrent training, for each operator. In addition, the flightcrew member must satisfactorily complete each operator's checking and qualification modules, including recurrent checking.

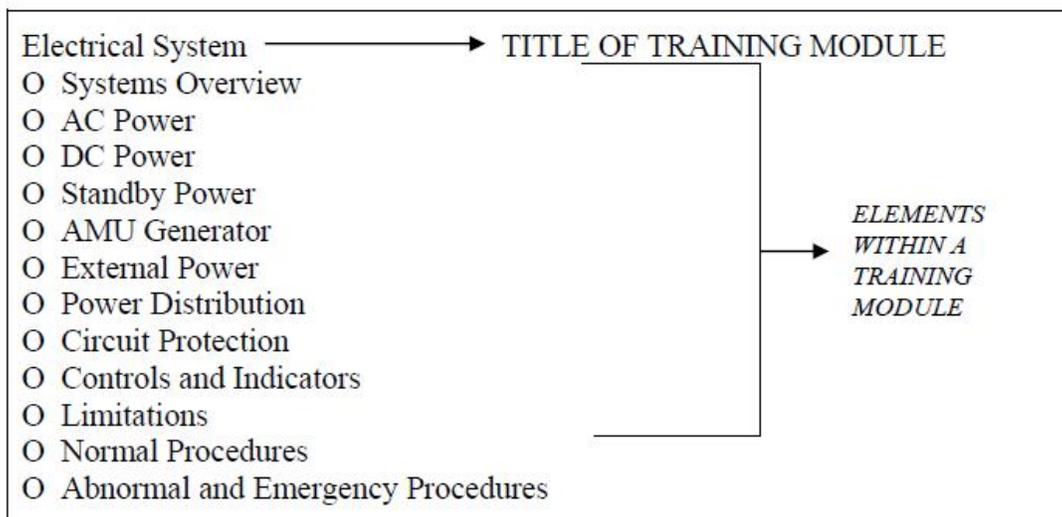
### **3-1079 TRAINING MODULE CONSTRUCTION (ELEMENTS OR EVENTS).**

Curriculum segments consist of training modules. Training modules are in turn constructed of elements or events arranged in a logical sequence. Curriculum segments and modules should be constructed so that instruction proceeds from the most basic concept and skill to the more advanced in a building block approach. The scope and content of each training module depends upon the category of training and the curriculum in which the curriculum segment is to be incorporated. The number and content of modules for a particular curriculum segment may vary from one category of training to another. For example, aircraft ground training modules in the upgrade training category may not need to be as comprehensive as the aircraft ground training modules in the initial equipment category of training. The amount of detail in each module

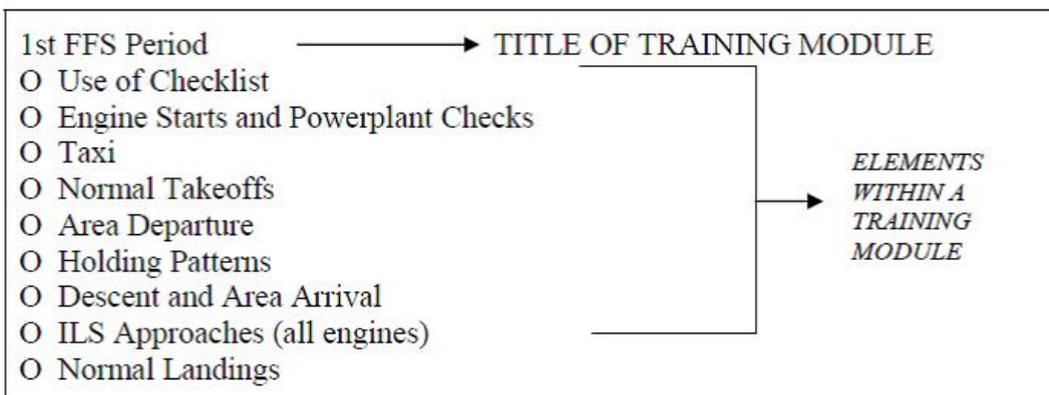
determines the training hours necessary to complete the training required by a curriculum segment.

**A. Example Training Module Outlines.** Operators should present training modules to the POI in outline form for initial approval. Table 3-36, Example of Related Elements in an Aircraft Ground Training Module Outline, and Table 3-37, Example of Related Events in a Flight Training Module Outline, are examples of training module outlines. These are only examples and are not intended to imply the only acceptable methods, sequence of instructional delivery, subject titles, or amount of detail.

**Table 3-36. Example of Related Elements in an Aircraft Ground Training Module Outline**



**Table 3-37. Example of Related Events in a Flight Training Module Outline**



**B. Details in Training Module Outline.** Operators must construct training module outlines with enough detail to ensure that the POI can identify that the essential features of the subject have been addressed and that regulatory requirements have been met. The training

module outline will serve as a foundation from which the operator will develop complete and usable courseware and select appropriate instructional delivery methods. The effectiveness of courseware and instructional delivery methods cannot be evaluated before training begins and must, therefore, be evaluated during phase four of the approval process.

**1) Adjustment to Training Module Outlines.** Once approved, training module outlines normally remain relatively fixed, requiring adjustment only when new elements or events are introduced. For example, if the operator proposed to install Automatic Dependent Surveillance—Broadcast (ADS-B) equipment in his or her aircraft, existing training module outlines would need to be revised to include ground and flight training of ADS-B. A revision to a training module outline must be approved by the POI.

**2) Adjustment to Courseware.** The operator has the flexibility to make adjustments to courseware as long as the adjustment does not add or delete elements or events from the training module outline. Any changes (adding or deleting elements or events) to the training module outline must be approved by the POI. POIs may also find it necessary, on the basis of surveillance reports or other information, to require the operator to modify courseware, instructional delivery methods, and training module outlines.

### **C. Using a Training Module in Multiple Curricula and Categories of Training.**

A single training module may be used in more than one curriculum and in more than one category of training. For example, a training module that specifies a review of emergency evacuation procedures for recurrent training could be the same for requalification training. POIs should, however, encourage operators to develop courseware that places emphasis on the particular category of training. For example, PIC upgrade training should emphasize duty position responsibilities. The emphasis in SIC upgrade training (FE to SIC), however, should be on piloting skills as well as on the requirements of the new duty position. Transition training should emphasize aircraft systems and the procedures and piloting skills needed to operate a different aircraft type. In many cases, operators may develop different sets of courseware from a single training module outline to cover differences in emphasis.

**RESERVED.** Paragraphs 3-1080 through 3-1094.

## VOLUME 3 GENERAL TECHNICAL ADMINISTRATION

### CHAPTER 19 TRAINING PROGRAMS AND AIRMAN QUALIFICATIONS

#### Section 8 Special Curriculum Segments

**3-1301 GENERAL.** This section contains direction and guidance to be used by principal operations inspectors (POI) for the evaluation of an operator's special curriculum segments for approval. To conduct such an evaluation, POIs should be aware of the following distinction between basic training and special training.

**A. Basic Training.** The six training categories defined in Volume 3, Chapter 19, Section 1, paragraph 3-1075, contain the basic training required for flightcrew members for qualification in a specific duty position on a specified aircraft type. Training in the operations and procedures necessary to operate in the standard service volume to standard minimums is an integral part of these curriculums. This basic training must be conducted by all operators. Training methods and events are specified either in regulations or advisory circulars (AC) and are well understood in the air transportation industry.

**B. Special Training.** "Special" training is that training conducted by an operator to qualify flightcrew members beyond the scope of basic training. Each operator is required to conduct only that special training required for the operator's specific operations. Special training consists of either curriculum segments integrated into one or more of the six defined training categories or of curriculum segments grouped as an independent program. Special training is normally required for operations which require specific authorization by the operator's operations specifications (OpSpecs), such as the following:

- Class II navigation,
- Category II (CAT II) and Category III (CAT III) Approaches,
- Lower-than-standard minimums takeoffs,
- Extended-range operations with two-engine airplanes,
- Use of an autopilot instead of a second in command (SIC), and
- Airborne radar approaches.

**3-1302 SPECIAL CURRICULUM SEGMENT CONTENT.** When evaluating an operator's training program, POIs must ensure that the operator's special curriculum segments contain the necessary and appropriate elements. Since operators may develop special curriculum segments to accomplish almost any objective, the curriculum content is a result of the specific objective and should be no more or less than what is required to achieve the objective. Generally, POIs should ensure that an operator's special curriculum segments have been developed from a clearly stated objective, a task analysis, and specified performance standards. Special curriculum segments must be designed to develop each flightcrew member's knowledge, skill, and judgment in the performance of the stated tasks. Special curriculum segments must contain qualification criteria for the assessment of each flightcrew member's ability to perform identified tasks to the specified standard. Special training curriculum segments may also be required to be conducted on a recurring basis.

**3-1303 SPECIAL CURRICULUM SEGMENT APPROVAL.** POIs should follow the five-step process described in Volume 3, Chapter 19, Section 2, for the approval of special curriculum segments. The POI should evaluate an operator's initial curriculum outline to ensure that it includes appropriate segments, modules, elements, and events. ACs about the various special operations can also be an aid to the POI in defining training requirements for those operations (see Table 3-84, List of Applicable Advisory Circulars, for a partial listing of these ACs). The POI should evaluate the initial curriculum outline using both the applicable ACs and this order. The POI may grant initial approval when the operator's outline is in compliance with such guidance. When such direction and guidance does not exist, the POI must have the operator perform a task analysis to identify the required tasks and appropriate performance standards for the special curriculum segment. The task analysis and performance standards should be submitted by the operator as supporting documentation along with the initial curriculum outline. The POI must evaluate the supporting documentation in conjunction with the outline before granting initial approval. When the operator proposes a new or unique type of training, the Air Transportation Division (AFS-200) shall be informed for evaluation purposes through the regional Flight Standards division (RFSB).

**Table 3-84. List of Applicable Advisory Circulars**

NOTE: Inspectors should consult the current editions of:

|           |   |
|-----------|---|
| AC 90-45  | Approval of Area Navigation Systems for use in the U.S. National Airspace System  |
| AC 90-80  | Approval of Offshore Standard Approach Procedures, Airborne Radar Approaches, and Helicopter En Route Descent Areas   |
| AC 90-96  | Approval of U.S. Operators and Aircraft to Operate Under Instrument Flight Rules (IFR) in European Airspace Designated For Basic Area Navigation (B-RNAV)/RNAV 5 and Precision Area Navigation (P-RNAV) |
| AC 90-100 | U.S. Terminal and En Route Area Navigation (RNAV) Operations  |
| AC 90-101 | Approval Guidance for RNP Procedures with AR  |
| AC 90-105 | Approval Guidance for RNP Operations and Barometric Vertical Navigation in the U.S. National Airspace System  |
| AC 90-106 | Enhanced Flight Vision Systems  |
| AC 90-107 | Guidance for Localizer Performance with Vertical Guidance and Localizer Performance without Vertical Guidance Approach Operations in the U.S. National Airspace System                                  |
| AC 90-114 | Automatic Dependent Surveillance-Broadcast (ADS-B) Operations   |
| AC 91-70  | Oceanic and International Operations  |
| AC 91-85  | Authorization of Aircraft and Operators for Flight in Reduced Vertical Separation Minimum Airspace  |
| AC 120-28 | Criteria for Approval of Category III Weather Minima for Takeoff, Landing, and Rollout  |
| AC 120-29 | Criteria for Approval of Category I and Category II Weather Minima for Approach   |
| AC 120-42 | Extended Operations (ETOPS and Polar Operations)  |
| AC 120-55 | Air Carrier Operational Approval and Use of TCAS II   |
| AC 135-42 | Extended Operations (ETOPS) and Operations in the North Polar Area  |

**3-1304 SPECIFIC APPLICATIONS OF SPECIAL CURRICULUMS.** POIs should know of several common situations in which special curriculum segments are required. Some examples of specific applications of special curriculums follow.

**A. Flag Operations.** In flag operations it is a requirement that flightcrew members possess knowledge of those procedures and OpSpecs applicable to these operations. For Class II navigation, it may be required for flightcrew members to have knowledge of specialized navigation procedures (such as minimum navigation performance specification (MNPS)) and equipment (such as inertial navigation system (INS)). POIs should ensure that in flag operations, flightcrew members are required to have supervised practice and to demonstrate their competence in these operations before performing them without supervision (see Volume 4, Chapter 1).

**B. CAT II and CAT III Approaches.** For training in CAT II and CAT III approaches, POIs must ensure that the required training includes special equipment, procedures, practice, and a demonstration of competency. While some operators have successfully integrated this training into the six defined categories of training, others have conducted this training as a separate curriculum. POIs may approve either method of organization (see Volume 4, Chapter 2).

**C. Lower-Than-Standard Minimum Takeoffs.** Before pilots may conduct takeoffs with lower-than-standard minimums in revenue service, they must be given training and practice in, and have successfully demonstrated competence in, performing takeoffs in minimum authorized visibility conditions. POIs must ensure that training is given in: runway and lighting requirements; rejected takeoffs at, or near, takeoff decision speed ( $V_1$ ) with a failure of the most critical engine; taxi operations; and in procedures to prevent runway incursions under low visibility conditions. This training must be conducted in a full flight simulator (FFS) (see Volume 4, Chapter 2, Section 4).

**D. Autopilot Instead of SIC.** Pilots of general purpose, single-engine, and multiengine families of aircraft used in Title 14 of the Code of Federal Regulations (14 CFR) part 135 operations may be authorized to conduct IFR operations without an SIC, provided they have completed a special curriculum segment for qualification in such operations. Both the instrument proficiency check (IPC) required by part 135, § 135.297 and the competency check required by § 135.293 (when conducted qualifies the applicant for IFR operations) are to be conducted using an SIC. During these checks, the applicant must demonstrate adequate crew coordination and leadership skills. When the applicant is qualifying for single-pilot IFR operations, the applicant must also demonstrate the ability to safely conduct IFR flight without the assistance of another pilot or an autopilot.

**RESERVED.** Paragraphs 3-1305 through 3-1310.

**VOLUME 3 GENERAL TECHNICAL ADMINISTRATION****CHAPTER 19 TRAINING PROGRAMS AND AIRMAN QUALIFICATIONS****Section 11 Flightcrew Requalification Training Curriculums**

**3-1361 GENERAL.** This section contains information, direction, and guidance to be used by principal operations inspector (POI) and other inspectors for the review and approval of requalification training curriculums. In this section, a formal definition of requalification training is given; a definition is not included in the regulations. Since flightcrew members qualified for operations in revenue service under Title 14 Code of Federal Regulations (14 CFR) parts 121 and 135 do sometimes lose their qualification, it is useful for the operators to have a definition of requalification training, including the reasons for it and its objectives.

**A. Definition.** For the purposes of this order, requalification training is defined as that category of training conducted specifically to restore a previously qualified flightcrew member to a qualified status. The operator's requalification training curriculum must contain the specific duty position and aircraft type for the applicable operations (in some cases, aircraft family for certain part 135 operations). To be eligible for training in a requalification curriculum, a flightcrew member must have been previously qualified in that aircraft type and duty position and have subsequently lost that qualification.

**B. Reasons for Flightcrew Members Losing Qualification.** A flightcrew member may be simultaneously qualified in one aircraft or duty position and unqualified in another. A flightcrew member may lose qualification status and become "unqualified" for any of the following reasons:

- Failure to accomplish all of the recent experience requirements required by the regulations;
- Failure to complete recurrent training within the eligibility period established by the regulations (becoming overdue); or
- Failure of a checkride (becoming disqualified).

NOTE: If a flightcrew member fails a checkride in one aircraft, that flightcrew member cannot fly in revenue service in another aircraft until the flightcrew member's qualification has been reestablished.

**C. Objectives of Requalification Training.** Flightcrew members meet requalification training objectives by completing a combination of aircraft ground, flight, and qualification curriculum segments, as applicable. The training and qualification curriculum segments needed for a flightcrew member's requalification are determined by the reasons for and the length of the flightcrew member's unqualified status. A flightcrew member's requalification after a loss of currency may be as simple as reaccomplishing the recent experience events in which the flightcrew member is delinquent, such as landings. Requalification, however, may be as complex as the flightcrew member having to accomplish the events in the initial equipment category of training when the flightcrew member has been unqualified for an extended period of time. Remedial training after disqualification should be tailored to the specific case.

**D. Airport Ground Operational Safety.** Training in runway safety and the specific standard operating procedures (SOP) contained in the current edition of Advisory Circular (AC) 120-74, Parts 91, 121, 125, and 135 Flightcrew Procedures During Taxi Operations, and AC 91-73, Parts 91 and 135 Single Pilot, Flight School Procedures During Taxi Operations, should be incorporated in requalification training conducted by air carriers under parts 121 and 135, by training centers under 14 CFR part 142, by pilot schools under 14 CFR part 141, and by all other persons conducting training and evaluation under 14 CFR parts 61 and 91.

### **3-1362 REESTABLISHING RECENCY OF EXPERIENCE OF PART 121 PILOTS.**

Part 121, § 121.439(a) requires that each pilot operating under part 121 must have made at least three takeoffs and three landings in the airplane type in which the pilot is to serve in the previous 90-day period. In accordance with § 121.439(f), the Air Transportation Division (AFS-200) may authorize a deviation from the requirements of § 121.439(a) based on a designation of related aircraft (see Volume 3, Chapter 19, Section 12 for additional information regarding related aircraft designation and deviations based on designation of related aircraft). Unless a deviation has been authorized by AFS-200, a pilot who fails to meet the requirement of § 121.439(a) is unqualified to serve in part 121 operations. In such a case, the qualification curriculum segment for requalification training consists of either an experience module or a basic qualification module (proficiency check) in accordance with part 121 appendix F and Section 7 of this chapter. Aircraft ground training curriculum segments and flight training curriculum segments are usually not required. POIs must ensure that the operator's training modules for requalification meet the requirements that follow.

**A. Qualification Module.** A recency-of-experience qualification module may be used, which contains at least three takeoffs, three landings, and the following:

- A takeoff and landing with a simulated failure of the most critical powerplant;
- A landing from an instrument landing system (ILS) approach to the lowest ILS minimums the pilot is authorized in revenue operations; and
- A landing to a full stop.

**B. Devices Used to Accomplish Qualification Module.** The recency-of-experience qualification module may be accomplished in one of the following devices:

- An airplane, in nonrevenue operations under the supervision of a check pilot;
- An approved Level B, C, or D full flight simulator (FFS) under the supervision of a check pilot; or
- A Level A FFS under the supervision of a check pilot (The pilot must have previously logged 100 hours in the same type airplane. The pilot must also be subsequently observed during the first two landings in line operations by a check pilot. The pilot may not conduct approaches to minimums lower than Category I (CAT I), as specified in the operator's operations specifications (OpSpecs), until this requirement has been satisfied. The landings must be made within 45 days after completion of FFS training).

**C. FFS Usage.** When an FFS is used to reestablish recency of experience, all flightcrew positions must be occupied by individuals qualified in the operator's procedures and in the

specified duty positions. The flightcrew member's level of qualification does not have to be equivalent to that level required of a flightcrew member serving in revenue operations. The FFS must be operated in a normal flight scenario. Repositioning is not allowed.

**D. Pilot Proficiency Certification.** The check pilot must certify the proficiency of the pilot and enter that certification into the pilot's records.

**E. Deviation.** In accordance with § 121.439(f), AFS-200 may authorize a deviation to the requirements to reestablish recency of experience based on a designation of related aircraft (see Volume 3, Chapter 19, Section 12, for additional information regarding related aircraft designation and deviations based on designation of related aircraft).

**3-1363 REESTABLISHING RECENCY OF EXPERIENCE OF PART 121 FLIGHT ENGINEERS (FE).** Section 121.453 requires that FEs must have acquired at least 50 hours of flight time as FEs in the preceding 6 months in the airplane type in which they are to serve. An FE who has not met this requirement must reestablish recency of experience by completing a basic qualification module (flight check) conducted either by a check FE or by an FAA inspector, in accordance with Section 7 of this chapter. The check may be conducted in an airplane in nonrevenue operations, or in an "engineer simulator" as defined in Volume 5, Chapter 4.

### **3-1364 REESTABLISHING RECENCY OF EXPERIENCE OF PART 135 PILOTS.**

**A. Pilot in Command (PIC) Recent Experience Requirements.** Part 135, § 135.247 requires that each PIC operating under part 135 accomplish at least three takeoffs and three landings in an aircraft of the same category and class within the preceding 90 days. Additional requirements apply to the following specific situations:

1) If a PIC is required to hold a type rating, the PIC must have accomplished the three landings in that type of airplane.

2) If night operations are authorized, a PIC must have made three takeoffs and landings during the period extending from 1 hour after sunset to 1 hour before sunrise in an aircraft or in a Level B, C, or D FFS of the same category and class within the preceding 90 days.

3) If an airplane is equipped with a tailwheel, a PIC must have made three takeoffs and landings to a full stop in an airplane equipped with a tailwheel in the preceding 90 days.

**B. Qualification Module.** A PIC who has become unqualified because of a failure to accomplish the required landings may requalify by completing either a basic visual flight rules (VFR) or instrument flight rules (IFR) qualification module (competency check) as specified in § 135.293 and Section 7 of this chapter, or by completing a recency-of-experience qualification module. A VFR recency-of-experience qualification module consists of three takeoffs and three landings. One of these landings must be to a full stop. If the PIC is to operate a tailwheel airplane, the three landings must be to a full stop and completed in an airplane with a tailwheel. POIs must ensure that the operator's IFR recency-of-experience qualification module contains the following:

- A takeoff with a simulated failure of the most critical powerplant (when using a multiengine aircraft that has the performance characteristics which allow this event to be accomplished safely);
- A landing from an ILS approach to the lowest ILS minimums that the pilot is authorized to use in revenue operations;
- A landing with the simulated failure of the most critical powerplant (when using a multiengine aircraft); and
- At least one landing to a full stop.

**C. Devices Used to Accomplish Qualification Module.** The recency-of-experience qualification module may be accomplished in the following ways:

1) A PIC may reestablish recency of experience by performing the three takeoffs and landings in an airplane of the same category and class. When the PIC is required to have a type rating to command the airplane, the landings must be in that airplane type. These landings do not have to be supervised by a check pilot. The PIC must record the completion of the required landings and provide the operator with a record copy to be kept on file. A safety pilot is required for the IFR module.

2) The pilot may conduct at least three takeoffs and three landings in an approved Level B, C, or D FFS under the supervision of a check pilot.

3) The pilot may conduct three takeoffs and three landings in a Level A FFS under the supervision of a check pilot. When a Level A simulator is used, the pilot must have previously logged 100 hours in the same airplane type. The pilot must be subsequently observed by a check pilot while conducting two landings. If the landings are made in revenue service they must be the first two landings the pilot conducts. The landings must also be conducted within 45 days after the completion of FFS training.

**D. FFS Usage.** When an FFS is used to reestablish recency of experience for a pilot, all required flightcrew member duty positions must be occupied by individuals qualified in the operator's procedures and in the specific duty position. The individuals participating do not have to be qualified to serve in revenue operations. The FFS must be operated in a normal flight scenario. Repositioning is not allowed.

**E. Pilot Proficiency Certification.** The check pilot must certify to the proficiency of the pilot. The operator must enter that certification into the pilot's records along with the reason that requalification was required.

**F. Transport or Commuter Category Aircraft.** Recency-of-experience modules for PICs who operate airplanes of the transport category or commuter category should be accomplished under the supervision of a company flight instructor or a check pilot.

**G. Second in Command (SIC) Recent Experience Requirements.** Part 135 does not specify recent experience requirements for SICs. POIs should encourage operators to establish a minimum requirement that SICs must perform at least three landings within the previous 90 days in an aircraft of the same category and class. SICs in IFR operations must, however, have flown

and logged 6 hours of instrument flight (three of which may have been in an approved flight simulation training device (FSTD)) and six instrument approaches in the preceding six calendar-months in accordance with part 61, § 61.57. SICs in IFR operations who fail to meet the instrument experience requirements may requalify either by accomplishing a recency-of-experience module or an SIC, basic IFR qualification module in an aircraft of the same category in which revenue operations are to be conducted. The recency-of-experience module must consist of the hours and events in which the SIC is delinquent. The events required in an SIC basic IFR qualification module are specified in Section 6 of this chapter. The basic qualification module may be administered by an inspector or check pilot. The aircraft and FSTDs specified in Volume 3, Chapter 19, Section 6, Tables 3-62 through 3-64, may be used to accomplish these events, flight hours, and checks. When requalification is accomplished by means of a basic qualification module, the check pilot conducting the check must certify to the competency of the pilot. When the pilot requalifies by accomplishing the required hours and events without the supervision of a check pilot, the pilot shall record that accomplishment in a logbook and supply a record copy to the operator. The operator is responsible for keeping a record of these events.

**3-1365 REQUALIFICATION FOR FAILURE TO COMPLETE RECURRENT TRAINING DURING THE ELIGIBILITY PERIOD.** A requalification curriculum segment is required when a flightcrew member fails to complete recurrent training during a preestablished eligibility period. The minimum amount of training required in each segment of the curriculum is determined by the length of time the flightcrew member has been unqualified. Flightcrew members must be trained to proficiency and complete a qualification module before being returned to revenue service. Requalification curriculum outlines must specify minimum training hours and events. Both parts 121 and 135 allow flightcrew members to be trained to proficiency. In each individual case, more or less training hours called for in the curriculum outline may be required. Table 3-75, Part 121 Requalification Curriculums Flightcrew Member Overdue Training; Table 3-76, Part 135 Requalification Curriculums Flightcrew Member Overdue Training—Turbojet Airplanes, Transport Category Airplanes, Commuter Category Airplanes, and Large Helicopters; and Table 3-77, Part 135 Requalification Curriculums Flightcrew Member Overdue Training—Single and Multiengine General Purpose Airplanes contain the requalification requirements for parts 121 and 135 flightcrew members that have exceeded their respective eligibility periods for required training or checks.

**Table 3-75. Part 121 Requalification Curriculums Flightcrew Member Overdue Training**

| Time Past Month Due      | RGT SEGMENT                                   | RFT SEGMENT                             | QUALIFICATION SEGMENT   |
|--------------------------|---|---|---|
| Up to 12 calendar-months | The portion of RGT not accomplished when due. | The elements not accomplished when due. | The modules not accomplished in the eligibility period: PC, LC, FC, or special. |
| 12 to 35 months          | 16 hours                                      | 8 hours                                 | All qualification modules of the transition curriculum.                         |
| 36 to 59 months          | 24 hours                                      | 16 hours                                | All qualification modules of the transition curriculum                          |
| More than 59 months      | – SAME AS INITIAL EQUIPMENT TRAINING –        |   |   |

KEY: RGT - Recurrent Ground Training      PC - Proficiency Check  
RFT - Recurrent Flight Training              LC - Line Check  
FC - Flight Check

**Table 3-76. Part 135 Requalification Curriculums Flightcrew Member Overdue Training—Turbojet Airplanes, Transport Category Airplanes, Commuter Category Airplanes, and Large Helicopters**

| Time Past Month Due      | RGT SEGMENT                                   | RFT SEGMENT                             | QUALIFICATION SEGMENT   |
|--------------------------|---|---|---|
| Up to 12 calendar-months | The portion of RGT not accomplished when due. | The elements not accomplished when due. | The modules not accomplished in the eligibility period: PC, LC, or special. |
| 12 to 35 months          | 16 hours                                      | 8 hours                                 | All qualification modules of the transition curriculum.                     |
| 36 to 59 months          | 24 hours                                      | 16 hours                                | All qualification modules of the transition curriculum.                     |
| More than 59 months      | – SAME AS INITIAL EQUIPMENT TRAINING          |   |   |

KEY: RGT - Recurrent Ground Training      PC - Proficiency Check  
RFT - Recurrent Flight Training              LC - Line Check

**Table 3-77. Part 135 Requalification Curriculums Flightcrew Member Overdue Training—Single and Multiengine General Purpose Airplanes**

| Time Past Month Due      | RGT SEGMENT                                   | RFT SEGMENT                             | QUALIFICATION SEGMENT   |
|--------------------------|---|---|---|
| Up to 12 calendar-months | The portion of RGT not accomplished when due. | The elements not accomplished when due. | The modules not accomplished in the eligibility period: PC, LC, or special. |
| 12 to 35 months          | 50% of hours for initial equipment            | 50% of hours for initial equipment      | All qualification modules of the transition curriculum.                     |
| More than 35 months      | – SAME AS INITIAL EQUIPMENT TRAINING –        |   |   |

KEY: RGT - Recurrent Ground Training  
RFT - Recurrent Flight Training

CC - Competency Check  
LC - Line Check

**3-1366 FLIGHTCREW MEMBERS WHO DO NOT MEET RECENT EXPERIENCE REQUIREMENTS OR ARE OVERDUE FOR RECURRENT TRAINING UPON REASSIGNMENT TO A DIFFERENT TYPE OF AIRCRAFT.**

A flightcrew member who is reassigned to a duty position or aircraft type in which the flightcrew member was previously qualified, but is not currently qualified, must receive requalification training. The method used to requalify the flightcrew member differs according to the reason for the requalification, as follows:

**A. Lack of Required Recent Experience Events.** A flightcrew member who is unqualified solely because of not having accomplished the required recent experience events may be requalified in accordance with paragraphs 3-1362 through 3-1364, as applicable.

**B. Overdue Recurrent Training.** A flightcrew member who is unqualified for being overdue in recurrent training may be requalified in accordance with Tables 3-75, 3-76, and 3-77, as applicable.

**3-1367 FLIGHTCREW MEMBERS REASSIGNED TO A PREVIOUSLY HELD DUTY POSITION IN AN AIRCRAFT CURRENTLY BEING FLOWN.** When a flightcrew member is reassigned to a duty position previously held in the same type of aircraft the flightcrew member currently flies, requalification training may be necessary. The method used to requalify the flightcrew member differs according to the reason for the requalification, as follows:

**A. SIC to PIC/FE to SIC.** When a flightcrew member is returning from SIC to PIC or from FE to SIC, the flightcrew member must meet both the recent experience and recurrent training requirements for the duty position or be placed in requalification training.

**1)** A flightcrew member who is unqualified solely for not having accomplished the required recent experience may be requalified in accordance with paragraphs 3-1362 through 3-1364, as applicable.

2) A flightcrew member who is unqualified for being overdue for a recurrent training module may be requalified in accordance with Tables 3-75, 3-76, and 3-77, as applicable.

**B. Pilot to FE.** When a flightcrew member is moving from a pilot flightcrew member position to the FE flightcrew member position, requalification must be accomplished in accordance with paragraph 3-1365 (see Table 3-75).

**C. PIC to SIC.** When a PIC moves to an SIC position, requalification training consists of seat-dependent tasks related to the SIC position, such as checklist flow, and paperwork such as flight logs and weight and balance (W&B). Seat dependent requalification training requirements vary depending on the length of time the pilot was out of the SIC position and the complexity of the aircraft. Because of the wide variance in these situations, it is not practical for each situation to be addressed in this order. POIs must exercise judgment when reviewing each case.

**3-1368 REQUALIFICATION OF FLIGHTCREW MEMBERS WHO HAVE FAILED A CHECK.** A flightcrew member who fails a required check must be entered into requalification training. The requalification training segment must consist of at least that remedial training required to restore the flightcrew member's competence in the failed events. Training may consist of as little as a detailed debriefing, or it may need to be very extensive. Additional training should be given to strengthen the flightcrew member's overall performance. The reasons for the disqualification and the training given must be entered in the flightcrew member's records.

**A. Flightcrew Member Proficiency Certification.** The instructor, check pilot, or check FE conducting this training must certify to the flightcrew member's proficiency before the flightcrew member reaccomplishes the checkride. This certification is not limited to the events the flightcrew member failed, but it encompasses all events of the qualification module.

**B. FAA Notification.** The operator must notify the POI of all failures. Notification must be timely, so that the POI may arrange for an inspector to conduct or observe the qualification module when, in the POI's judgment, this action is required. Observation should be accomplished in the case of PICs failing basic qualification modules or line check modules. Operators may conduct as much requalification training as necessary before scheduling and conducting the qualification module.

**C. Qualification Curriculum Segment.** The qualification curriculum segment for an SIC or FE shall consist of the module previously failed. The qualification curriculum segment for a PIC shall consist of the basic qualification module, the line check module, or both, if appropriate.

**3-1369 EVALUATION OF REQUALIFICATION TRAINING CURRICULA FOR INITIAL APPROVAL.** When evaluating a requalification training curriculum outline for initial approval, inspectors must determine that the appropriate aircraft ground, flight, and qualification curriculum segments are listed and that each curriculum segment contains the required elements.

**A. Module Requirements.** Recency-of-experience modules only have to contain a listing of the events to be accomplished and the method the operator intends to use to accomplish them.

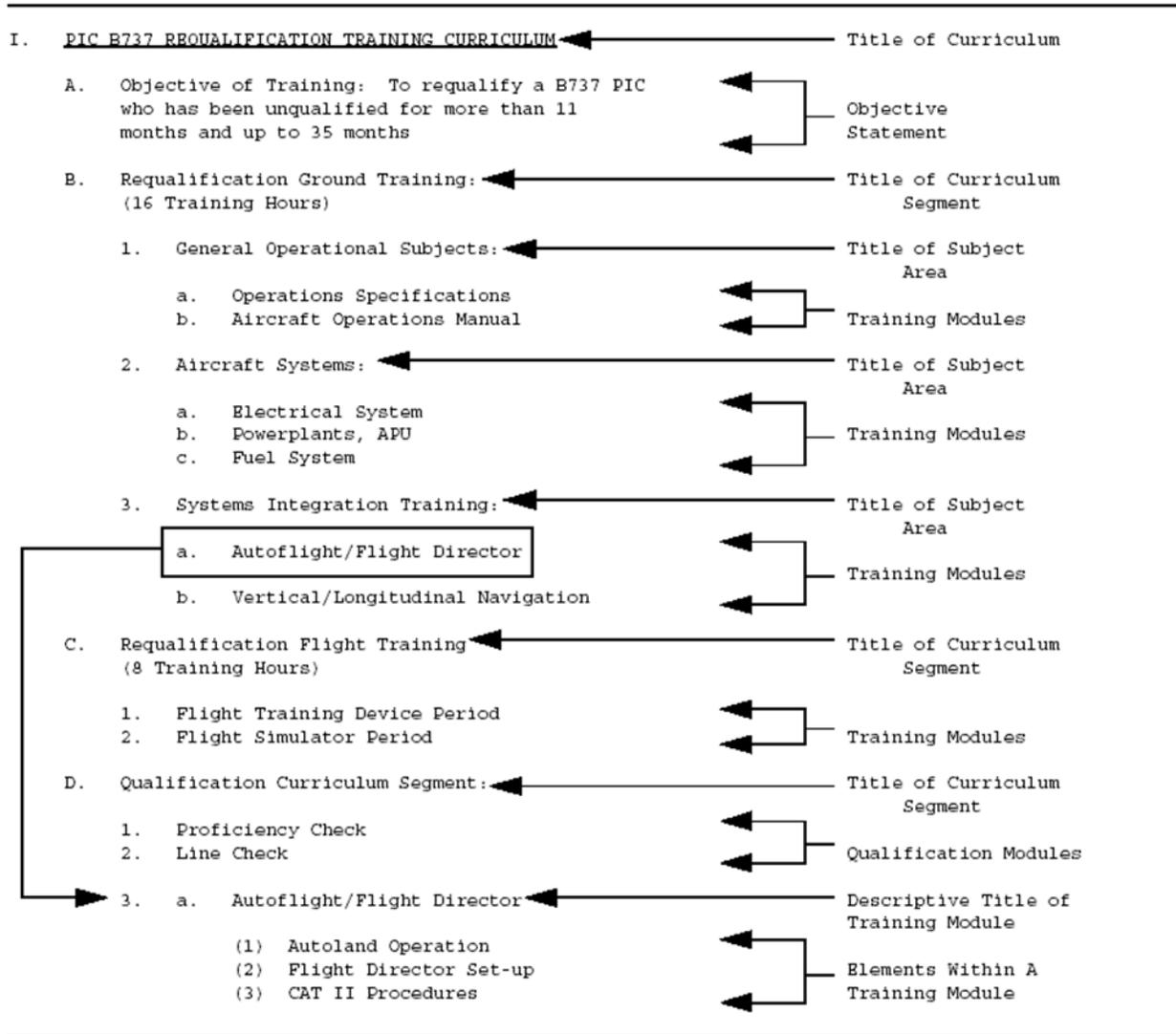
**B. Training and Qualification Segments.** The curriculum should contain training and qualification segments for remedial training of disqualified flightcrew members. The training segment only needs to contain a simple statement that the training given will be prescribed for the individual case in order to reestablish the flightcrew member's proficiency. The qualification segment, however, shall contain a listing of the modules the flightcrew member must complete to regain qualification.

**C. Curriculum Outline for Overdue Training.** Separate curriculum outlines should be prepared for flightcrew members overdue training in accordance with Tables 3-75, 3-76, and 3-77, as appropriate. The curriculum outline should provide sufficient information to allow the POI to determine that the elements and events in each training module are adequate to properly requalify the flightcrew member. An example of a requalification training curriculum outline, with a sample training module (autoflight/flight director), is in Figure 3-83, Example of a Requalification Training Curriculum Outline. The subject area content of aircraft ground and flight training curriculum segments and of qualification curriculum segments are in Volume 3, Chapter 19, Sections 5, 6, and 7, respectively. The job aids associated with these sections should be used in conjunction with Tables 3-75, 3-76, and 3-77 by POIs when determining the adequacy of an operator's proposal.

**D. Modules from Other Curriculums.** One technique an operator may use to construct requalification curriculum segments for approval is to start with ground and flight training modules from other curriculums (such as PIC transition aircraft ground training) and to remove unnecessary elements or to adjust the content of the elements as necessary. In the example shown in Figure 3-83, the number of elements and events in the training modules has been reduced from those provided for initial equipment training.

**E. Flightcrew Member's Record.** The reason for entry into requalification training must be placed in the flightcrew member's record. The operator may establish a new training/checking month or retain the flightcrew member's original training/checking month after the flightcrew member successfully completes the requalification training.

**Figure 3-83. Example of a Requalification Training Curriculum Outline**



**RESERVED.** Paragraphs 3-1370 through 3-1375.

**VOLUME 3 GENERAL TECHNICAL ADMINISTRATION****CHAPTER 19 TRAINING PROGRAMS AND AIRMAN QUALIFICATIONS****Section 12 Related Aircraft Designations, Training, and Deviations—Part 121**

**3-1376 GENERAL.** This section contains information, direction, and guidance to be used by inspectors when evaluating an operator's request for related aircraft designation; evaluating an operator's related aircraft differences training in all categories of training; and evaluating an operator's request for related aircraft deviations. Related aircraft differences training applies to designated related aircraft with different type certificates (TC). Differences training applies to related aircraft with the same TC that have been demonstrated and determined by the Administrator to have commonality. Information, direction, and guidance regarding evaluation of an operator's differences training is located in Volume 3, Chapter 19, Section 9. Definitions of terms are located in Volume 3, Chapter 19, Section 1.

**A. Background.** With the rapid advancement in modern technologies, both in manufacturing techniques and systems design and application, industry now incorporates products and processes that have redefined the relationships between aircraft types. For example, the technological development of flight guidance computers has produced "fly-by-wire" control laws embedded in computer software that increasingly determine and control the handling or flight characteristics of an aircraft. The use of such technology can produce aircraft of differing types and aerodynamic airframes, with similar handling and/or flight characteristics. In addition, modern aircraft systems and displays may allow different type certificated (TC'd) aircraft to have common flight deck and systems designs. Given this technological advancement, the Administrator may determine that two or more aircraft of the same make with different TCs have commonality to the extent that credit between those aircraft may be applied for flightcrew member training, checking, recent experience, Operating Experience (OE), operating cycles, and line operating flight time for consolidation of knowledge and skills.

**B. Aircraft with Common Type Ratings.** Aircraft with common type ratings, as defined in the current edition of Advisory Circular (AC) 120-53, Guidance for Conducting and Use of Flight Standardization Board Evaluations, and determined by the Flight Standardization Board (FSB) (e.g., Boeing 757 and Boeing 767), have different TCs. Therefore, the requirement for related aircraft designation applies to a certificate holder seeking approval of related aircraft differences training. A certificate holder's determination on whether to pursue a related aircraft designation or develop related aircraft differences training is voluntary. The alternative to related aircraft differences training is for the certificate holder to develop comprehensive training programs for each aircraft type.

**3-1377 Related Aircraft Designation.** In accordance with Title 14 of the Code of Federal Regulations (14 CFR) part 121, § 121.418(b)(1), a certificate holder may submit a request for related aircraft designation. The Air Transportation Division (AFS-200) retains the authority to approve or deny a request for related aircraft designation. An approved request for related aircraft designation applies only to the certificate holder that submitted the request. Each certificate holder seeking a related aircraft designation must submit a request independently.

A principal operations inspector (POI) must comply with the following process if a certificate holder submits a request for related aircraft designation.

**A. Approval Process.** When a certificate holder notifies the POI of its intent to request related aircraft designation, the POI should provide the certificate holder with the following information. The request must be submitted to the POI. The request may be submitted via any method found acceptable to the POI (e.g., paper letter, electronic, fax, etc.) The request may be in any format, but must include at least the following information. Figure 3-185, Recommended Format for Request for Related Aircraft Designation, provides a recommended format for the request.

1) Name, air carrier certificate number, and business address of the certificate holder.

2) Identification of the base aircraft type. Certificate holders must identify the base aircraft by the type certification (e.g., Boeing 757). The base aircraft is typically the aircraft type which the flightcrew members are first trained in or which the certificate holder has the most number of.

3) Identification of the aircraft type requested for related aircraft designation. Certificate holders must identify the requested aircraft by the type certification (e.g., Boeing 767). If a certificate holder is requesting more than one related aircraft designation, each request should be submitted separately.

4) Supporting documentation for the request for related aircraft designation. Typically, the FSB report for the base aircraft will be referenced as the supporting documentation.

**B. POI Review of Request.** The POI must review the request and then determine whether to return the request to the certificate holder or forward the request to the regional Flight Standards division (RFSD).

1) **POI Review.** The POI must review the request for the following:

a) Request is complete. The POI must ensure the request contains the minimum information required by subparagraph 3-1377A.

b) Base aircraft type and aircraft type requested for related aircraft designation are the same make (e.g., Boeing).

c) If reference to the FSB report is not used as the supporting documentation, the POI must ensure the request includes data from an evaluation using systems, processes, and tests similar to those described in AC 120-53.

2) **Acceptable Request.** If the request meets the requirements of subparagraph 3-1377B1), the POI must forward the request to the RFSD with a memo of recommendation for approval or denial. The POI must include an explanation for the recommendation.

**3) Unacceptable Request.** If the request does not meet the requirements of subparagraph 3-1377B1), the POI must return the request to the certificate holder with a letter explaining the reason the request was returned. The letter should also state that the certificate holder may resubmit the request once the deficiencies are addressed.

**C. RFSD Review of Request.** The RFSD must review the request and then determine whether to return the request to the certificate-holding district office (CHDO) or forward the request to AFS-200.

1) The RFSD must review the request for the following:

a) Request is complete. The RFSD must ensure the request contains the minimum information required by subparagraph 3-1377A.

b) Base aircraft type and aircraft type requested for related aircraft designation are the same make (e.g., Boeing).

c) If reference to the FSB report is not used as the supporting documentation, the RFSD must ensure the request includes data from an evaluation using systems, processes, and tests similar to those described in AC 120-53.

**2) Acceptable Request.** If the request meets the requirements of subparagraph 3-1377C1), the RFSD must forward the request to AFS-200 at 9-AFS-200-Correspondence@faa.gov with a memo of recommendation for approval or denial. The RFSD must include an explanation for the recommendation. The RFSD must also include the recommendation and explanation from the POI.

**3) Unacceptable Request.** If the request does not meet the requirements of subparagraph 3-1377C1), the RFSD must return the request to the CHDO with an explanation of the reason the request was returned.

**D. AFS-200 Review of Request.** AFS-200 will review the request and the recommendations from the RFSD and POI in collaboration with the appropriate Aircraft Evaluation Group (AEG).

1) **Request Approved.** If the request is approved, AFS-200 will notify the POI through the RFSD by memo. Any additional conditions and limitations that AFS-200 determines are necessary will be included in the approval.

2) **Request Not Approved.** If the request is not approved, AFS-200 will notify the POI through the RFSD by memo with an explanation of the reason the request was not approved.

**E. Notification to Certificate Holder.** After the POI receives the memo from AFS-200, the POI must notify the certificate holder by letter.

1) **Request Approved.** If the request was approved, the POI must ensure the letter specifies all the conditions and limitations specified by AFS-200. These conditions and limitations must be included in any training program submitted by the certificate holder that

includes related aircraft differences training. A sample letter is shown in Figure 3-186, Sample Letter Approving Request for Related Aircraft Designation.

**2) Request Not Approved.** If the request was not approved, the POI must ensure the letter includes the explanation of the reason the request was not approved. The letter should also state that the certificate holder may resubmit the request once the deficiencies are addressed. A sample letter is shown in Figure 3-187, Sample Letter Denying Request for Related Aircraft Designation.

**F. Duration of Approved Request.** An approved request will remain valid as long as the certificate holder continues to operate the base aircraft and the designated related aircraft.

**1) Additional Series or Variations of the Designated Related Aircraft that are Specified in the Master Difference Requirement (MDR) of the FSB Report.** The approved request will also remain valid for any additional series or variations of the designated related aircraft that are specified in the MDR of the referenced FSB report, as amended.

a) For example, a certificate holder operates Boeing 757-200 and Boeing 767-200 airplanes. The certificate holder requests and receives approval of the following related aircraft designation:

- Base Aircraft – Boeing 757.
- Designated Related Aircraft – Boeing 767.

b) Subsequently, the certificate holder proposes to operate a Boeing 767-300 airplane. The approved request is still valid because the Boeing 767-300 is specified in the MDR of the Boeing 757 and Boeing 767 FSB report. However, the certificate holder's training program must be revised to include the differences and related aircraft differences for the Boeing 767-300.

**2) Additional Series or Variations of Designated Related Aircraft that are Not Specified in the MDR of the FSB Report.** If the certificate holder proposes to add a series or variation of the designated related aircraft that is not specified in the MDR of the referenced FSB report, the POI must consult the appropriate AEG. If the additional series or variation of the designated related aircraft affects pilot knowledge, skills, or abilities, the certificate holder should submit a differences description, an analysis of the effects of the differences, and proposed training for the differences to the POI. The POI must obtain concurrence from AFS-200 before approving the related aircraft differences training for the new series or variation. AFS-200 will collaborate with the appropriate AEG to determine if the analysis is acceptable, or if FSB action is necessary. The FSB may require that additional information or analysis be provided, or that the entire difference level test process or parts thereof be completed.

a) For example, a certificate holder operates Boeing 767-300 and Boeing 757-300 airplanes. The certificate holder requests and receives approval of the following related aircraft designation:

- Base Aircraft – Boeing 767.

- Designated Related Aircraft – Boeing 757.

b) Subsequently, the certificate holder proposes to operate a Boeing 757-700 airplane. The Boeing 757-700 is not specified in the MDR of the Boeing 757 and Boeing 767 FSB report. The POI consults with the appropriate AEG and it is determined that the differences affect pilot knowledge, skills, and abilities pertinent to flight safety. So, the POI would review the analysis and proposed training submitted by the certificate holder and seek concurrence from AFS-200 to approve the related aircraft differences training for the Boeing 757-700. AFS-200 would collaborate with the AEG to determine if the analysis is acceptable or if FSB action is necessary.

**3) Modification to the Designated Related Aircraft.** If a certificate holder proposes a modification to the designated related aircraft, the POI should consult with the appropriate AEG to determine if the change affects MDRs or other FSB report recommendations. The criteria for this assessment includes whether or not the difference affects pilot knowledge, skills, or abilities pertinent to flight safety. If the modification affects pilot knowledge, skills, or abilities, the certificate holder should submit a differences description, an analysis of the effects of the differences, and proposed training for the differences to the POI. The POI must obtain concurrence from AFS-200 before approving the related aircraft differences training for the modification. AFS-200 will collaborate with the appropriate AEG to determine if the analysis is acceptable, or if FSB action is necessary. The FSB may require that additional information or analysis be provided, or that the entire difference level test process or parts thereof be completed.

**G. Retention of Approval Memo.** A copy of the approval memo from AFS-200 and the signed approval letter from the POI must be kept on file in the CHDO with the training program files as long as the certificate holder continues to operate the base aircraft and the designated related aircraft. Additionally, in accordance with Volume 3, Chapter 19, Section 2, a copy of the approval memo and the signed approval letter from the POI must be kept on file with superseded curriculums for 2 years.

**3-1378 RELATED AIRCRAFT DIFFERENCES TRAINING.** If AFS-200 approves the related aircraft designation, in accordance with § 121.418(b)(2), a certificate holder may then submit a request for approval of a training program that includes related aircraft differences training. The approval process for related aircraft differences training follows the five-step process described in Volume 3, Chapter 19, Section 2.

**A. Modification of Required Training.** In accordance with § 121.418(c), a certificate holder may modify the training required by §§ 121.419, 121.424, 121.425, and 121.427, for the designated related aircraft. A certificate holder may include related aircraft differences as a separate curriculum in the approved training program, or a certificate holder may include related aircraft differences in the curriculums for the base aircraft.

**1) Separate Related Aircraft Differences Curriculum.** The certificate holder may choose to develop separate related aircraft differences curriculums for a flightcrew member to be reassigned from one aircraft type to a different designated related aircraft type. An example is “related aircraft differences transition Boeing 767 PIC curriculum”.

**2) Related Aircraft Differences Included in Curriculum for Base Aircraft.** A certificate holder may include related aircraft differences training in initial new-hire, initial equipment, transition, upgrade, and/or recurrent curriculums for the base aircraft.

a) **Separate Differences Curriculum Segments.** A certificate holder training flightcrew members on more than one aircraft type simultaneously may choose to develop a related aircraft differences curriculum segment separate from the curriculums segments for the base aircraft. For example, an “initial equipment Boeing 757 and Boeing 767 SIC curriculum” may include a ground training curriculum segment for the Boeing 757, a flight training curriculum segment for the Boeing 757, and a related aircraft differences curriculum segment for the Boeing 767.

b) **Integrated Training.** A certificate holder training flightcrew members on more than one aircraft type simultaneously may choose to integrate the related aircraft differences into each curriculum segment. For example, an initial equipment Boeing 757 and Boeing 767 ground training curriculum segment may include a training module which includes training on the powerplant for the Boeing 757 and training on the powerplant for the Boeing 767.

**B. Curriculum Requirements.** In addition to the items specified in Volume 3, Chapter 19, Section 2, each curriculum or curriculum segment for related aircraft differences training must include:

1) Each appropriate subject required for the ground training for the designated related aircraft;

2) Each appropriate maneuver or procedure required for the flight training for the designated related aircraft;

3) Each appropriate procedure or drill required for the crewmember emergency training for the designated related aircraft; and

4) The number of programmed hours of ground training, flight training, and crewmember emergency training for the designated related aircraft.

5) A complete and accurate analysis of the differences in design, systems, and maneuvers of the base aircraft and designated related aircraft involved. The certificate holder must submit documentation supporting the related aircraft differences analysis. This analysis will typically include the certificate holder’s Operator Difference Requirements (ODR) tables. If the related aircraft designation was approved based on the FSB report, the ODR tables must comply with and be just as or more restrictive than the MDR and other recommendations in the FSB report for the base aircraft type. (FSB reports are posted on the Flight Standards Information Management System (FSIMS) under the “Publications” tab.) Additional information about use of FSB reports is available in Volume 8, Chapter 2 and AC 120-53.

6) Methods and devices used to conduct the related aircraft differences training. The methods and devices must be appropriate to the degree of differences between the base aircraft and the designated related aircraft. For purposes of describing degrees of difference and for defining acceptable training methods, five levels of differences have been defined (Levels A–E).

(Refer to AC 120-53 for the definitions of the levels of differences.) If the related aircraft designation was approved based on the FSB report, the methods and devices must be consistent with the MDR in the FSB report for the base aircraft type.

**3-1379 RELATED AIRCRAFT DEVIATIONS.** If AFS-200 approves the related aircraft designation, a certificate holder may also request a deviation to allow credit for designated related aircraft OE and operating cycles, line operating flight time for consolidation of knowledge and skills, recent experience, and proficiency checking in accordance with §§ 121.434, 121.439, and 121.441. AFS-200 retains the authority to approve or deny deviation requests for designated related aircraft. A certificate holder may submit a request for deviation concurrently with the request for related aircraft designation. POIs must comply with the following process if a certificate holder requests a deviation in accordance with § 121.434(a)(4), 121.439(f), or 121.441(f).

**A. Approval Process.** When a certificate holder notifies the POI of their intent to request a deviation for a designated related aircraft, the POI should provide the certificate holder with the following information.

**1) Request for Deviation.** The request for deviation must be submitted to the POI. The request may be submitted via any method found acceptable to the POI (e.g., paper letter, electronic, fax, etc.) The request may be in any format but must include at least the following information. Figure 3-188, Recommended Format for Request for Deviation for Related Aircraft, provides a recommended format for the request.

a) Name, air carrier certificate number, and business address of the certificate holder.

b) Identification of the base aircraft type. Certificate holders must identify the base aircraft by the type certification (e.g., Boeing 757).

c) Identification of the designated related aircraft type. Certificate holders must identify the designated related aircraft by the type certification (e.g., Boeing 767). If a certificate holder is requesting deviation(s) for more than one designated related aircraft, each request should be submitted separately.

d) Identification of each specific provision and flightcrew member duty position for which the certificate holder is requesting a deviation. For example, OE hours for pilot-in-command (PIC) initial training Group II as specified in § 121.434(c)(3).

e) Supporting documentation for the request for deviation. Typically, the FSB report for the base aircraft will be referenced as supporting documentation.

f) For request for deviation from the hours of OE and/or number of operating cycles required by § 121.434, the proposed OE hours and number of operating cycles in lieu of the OE hours and/or operating cycles required by § 121.434. The proposed hours and cycles must be based on review of the designated related aircraft, the certificate holder's operation, and the flightcrew member duty position.

g) For request for deviation from the hours of line operating flight for consolidation of knowledge and skills required by § 121.434, the proposed consolidation hours in lieu of the consolidation hours required by § 121.434. The proposed hours must be based on review of the designated related aircraft, the certificate holder's operation, and the flightcrew member duty position.

h) For request for deviation from the recent experience requirements of § 121.439, the proposed number of takeoffs, landings, maneuvers, and procedures necessary to maintain or reestablish recency of experience. The proposal must be based on review of the designated related aircraft, the certificate holder's operation, and the flightcrew member duty position.

i) For request for deviation from the proficiency check requirements of § 121.441.

1. For qualification proficiency checks, the proposed maneuvers and procedures to be included in the designated related aircraft proficiency check based on review of the designated related aircraft, the certificate holder's operation, and the flightcrew member duty position.

2. For recurrent proficiency checks, the frequency of the designated related aircraft proficiency check and the proposed maneuvers and procedures to be included in the designated related aircraft proficiency check based on review of the designated related aircraft, the certificate holder's operation, and the flightcrew member duty position.

**B. POI Review of the Request for Deviation.** The POI must review the request for deviation and then determine whether to return the request to the certificate holder or forward the request to the RFSD.

1) **Review.** The POI must review the request for the following:

a) Request is complete. The POI must ensure the request contains the minimum information required by subparagraph 3-1379A.

b) If AFS-200 has previously approved the related aircraft designation, or if the request for related aircraft designation is being submitted concurrently with the request for deviation.

c) The request includes all applicable conditions and limitations specified in the memo approving the related aircraft designation.

d) If the FSB report does not include recommendations to support the request, the POI must ensure the request includes data or analysis similar to those described in AC 120-53.

2) **Acceptable Request.** If the request meets the requirements of subparagraph 3-1379B1), the POI must forward the request to the RFSD with a memo of

recommendation for approval or denial. The POI must include an explanation for the recommendation.

**3) Unacceptable Request.** If the request does not meet the requirements of subparagraph 3-1379B1), the POI must return the request to the certificate holder with a letter explaining the reason the request was returned. The letter should also state that the certificate holder may resubmit the request once the deficiencies are addressed.

**C. RFSD Review of the Request for Deviation.** The RFSD must review the request for deviation and then determine whether to return the request to the CHDO or forward the request to AFS-200.

**1) Review.** The RFSD must review the request for the following:

a) Request is complete. The RFSD must ensure the request contains the minimum information required by subparagraph 3-1379A.

b) If AFS-200 has previously approved the related aircraft designation or if the request for related aircraft designation is being submitted concurrently with the request for deviation.

c) The request includes all applicable conditions and limitations specified in the memo approving the related aircraft designation.

**2) Acceptable Request.** If the request meets the requirements of subparagraph 3-1379C1), the RFSD must forward the request to AFS-200 at 9-afs-200-correspondence@faa.gov with a memo of recommendation for approval or denial. The RFSD must include an explanation for the recommendation. The RFSD must also include the recommendation and explanation from the POI.

**3) Unacceptable Request.** If the request does not meet the requirements of subparagraph 3-1379C1), the RFSD must return the request to the CHDO with an explanation of the reason the request was returned.

**D. AFS-200 Review of Request for Deviation.** AFS-200 will review the request and the recommendations from the RFSD and POI in collaboration with the appropriate AEG.

**1) Request Approved.** If the request for deviation is approved, AFS-200 will notify the POI through the RFSD by memo. The memo will authorize the POI to issue or amend Operations Specification (OpSpec) A005 to authorize the deviation. The memo will contain the conditions and limitations determined necessary by AFS-200 to be included in the OpSpec.

**2) Request Not Approved.** If the request for deviation is not approved, AFS-200 will notify the POI through the RFSD by memo with an explanation of the reason the request was not approved.

**E. Notification to Certificate Holder.** After the POI receives the memo from AFS-200, the POI must notify the certificate holder.

**1) Request Approved.** If the request was approved, the POI must issue or amend OpSpec A005 to authorize the applicable deviation. The POI must incorporate the conditions and limitations in OpSpec A005 as specified in the authorization memo. A sample OpSpec A005 with deviations from §§ 121.434, 121.439, and 121.441 is shown in Figure 3-189, Sample OpSpec A005 Authorizing Deviations from §§ 121.434, 121.439, and 121.441.

NOTE: The available list of deviations in the Web-based Operations Safety System (WebOPSS) includes multiple deviations with different descriptions for §§ 121.434, 121.439, and 121.441. The POI must ensure the correct deviation with the correct description is selected.

**2) Request Not Approved.** If the request was not approved, the POI must notify the certificate holder by letter explaining the reason the request was not approved. The letter should also state that the certificate holder may resubmit the request once the deficiencies are addressed. A sample letter is shown in Figure 3-190, Sample Letter Denying Request for Deviation for Related Aircraft.

**F. Duration of Deviation.** Unless terminated by the FAA, an approved deviation will remain valid as long as the certificate holder continues to operate the base aircraft and designated related aircraft specified in the deviation. In accordance with §§ 121.434(a)(4)(iii), 121.439(f)(3), and 121.441(f)(3), the FAA may terminate a grant of deviation at any time. If the deviation is terminated for any reason, the certificate holder must be notified and the POI must amend OpSpec A005 to remove the deviation.

**G. Retention of Authorization Memo.** In accordance with the current edition of Order 1350.15, Records Organization, Transfer, and Destruction Standards, Chapter 11, Item No. 8400, subparagraph 1b, Basic Certificates, Specifications, and Authorizations, the CHDO must retain the authorization memo for the duration of the deviation. The CHDO may destroy the memo 5 years after the deviation is superseded or terminated.

**Figure 3-185. Recommended Format for Request for Related Aircraft Designation**

| <b>Request for Related Aircraft Designation</b> |  |
|---|--|
| Name of Certificate Holder                      | <i>[ABC Airlines, Inc.]</i>  |
| Air Carrier Certificate Number                  | <i>[XYZA123A]</i>  |
| Business Address of Certificate Holder          | <i>[123 Main Street, Anytown, PA 12345]</i>  |
| Base Aircraft Type                              | <i>[Identify by the type certification (e.g., Airbus A320).]</i>   |
| Proposed Related Aircraft Type                  | <i>[Identify by the type certification (e.g., Airbus A330).]</i>   |
| Supporting Documentation                        | <i>[If the supporting documentation is the FSB report, reference the FSB report by the full name, revision number, and revision date. The FSB report does not need to be submitted with the request. If the supporting documentation is not the FSB report, include the supporting data and analysis as an attachment to the request.]</i> |

**Figure 3-186. Sample Letter Approving Request for Related Aircraft Designation**

ABC Airlines  
 Director of Training  
 1 Park Avenue  
 New York, NY 11001

Dear Ms. Rogers:

This letter is in reference to ABC Airlines' request for related aircraft designation submitted on November 3, 2013.

The Air Transportation Division (AFS-200) approves your request as follows:

Base Aircraft Type: Boeing 757

Designated Related Aircraft Type: Boeing 767

This approval is valid as long as ABC Airlines continues to operate the Boeing 757 and Boeing 767, or until notified by the FAA.

Principal Operations Inspector

**Figure 3-187. Sample Letter Denying Request for Related Aircraft Designation**

ABC Airlines  
 Director of Training  
 1 Park Avenue  
 New York, NY 11001

Dear Ms. Rogers:

This letter is in reference to ABC Airlines' request for related aircraft designation submitted on November 3, 2013.

The Air Transportation Division (AFS-200) denies your request for the following:  
 Base Aircraft Type: Boeing 737  
 Designated Related Aircraft Type: Boeing 757

The request is not approved because ABC Airlines did not submit sufficient data to support a related aircraft designation. The data submitted did not address all the differences in design, systems, and maneuvers between the Boeing 737 and the Boeing 757.

ABC Airlines may resubmit a request for related aircraft designation after the issues identified above have been addressed.

Principal Operations Inspector

**Figure 3-188. Recommended Format for Request for Deviation for Related Aircraft**

| <b>Request for Deviation for Designated Related Aircraft</b>   |  |
|--|--|
| Name of Certificate Holder   | <i>[ABC Airlines, Inc.]</i>  |
| Air Carrier Certificate Number   | <i>[XYZA123A]</i>  |
| Business Address of Certificate Holder   | <i>[123 Main Street, Anytown, PA 12345]</i>  |
| Base Aircraft Type   | <i>[Identify by the type certification (e.g., Airbus A320).]</i>   |
| Designated Related Aircraft Type   | <i>[Identify by the type certification (e.g., Airbus A330).]</i>   |
| Supporting Documentation   | <i>[If the supporting documentation is the FSB report, reference the FSB report by the full name, revision number, and revision date. The FSB report does not need to be submitted with the request. If the supporting documentation is not the FSB report, include the supporting data and analysis as an attachment to the request.]</i> |
| <b>Request for Deviation from the Operating Experience Hours and/or Number of Operating Cycles required by § 121.434</b> |  |

| Provision   | Flightcrew Member Duty Position | Category of Training   | 14 CFR Required Hours and Cycles  | Proposed Hours and Cycles  |
|---|---------------------------------|--|---|--|
| [121.434(c)(3)(i)]  | [Pilot in Command]              | [Initial Equipment]  | [25 hours and 4 operating cycles with at least 2 as the pilot flying]   | [XX hours and X operating cycles with at least X as the pilot flying]  |
| <b>Request for Deviation from the Hours of Line Operating Flight Time for Consolidation of Knowledge and Skills required by § 121.434</b> |                                 |  |   |  |
| Provision   | Flightcrew Member Duty Position | Category of Training   | 14 CFR Required Hours and Timeframe   | Proposed Hours and Timeframe   |
| [121.434(g)]  | [Second in Command]             | [Transition]   | [100 hours within 120 days of completing a § 121.441 proficiency check]   | [XX hours within 120 days of completing a § 121.441 proficiency check] |
| <b>Request for Deviation from the Recent Experience Requirements of § 121.439</b>   |                                 |  |   |  |
| Provision   | Flightcrew Member Duty Position | 14 CFR Recent Experience Requirements  | Proposed Recent Experience Requirements   |  |
| [121.439(a)]  | [Pilot in Command]              | [Three takeoffs and three landings in the airplane type within the preceding 90 days or reestablish recency of experience in accordance with § 121.439(b)]             | [X takeoffs and X landings in the base aircraft or designated related aircraft within the preceding X days. At least X takeoffs and X landings must be in the base aircraft and at least X takeoffs and X landings must be in the designated related aircraft. Reestablish recency of experience for the base aircraft in accordance with § 121.439(b). Reestablish recency of experience for the designated related aircraft in accordance with § 121.439(b).] |  |
| [121.439(a)]  | [Second in Command]             | [Reestablish recency of experience by completing at least three takeoffs and three landings in the airplane type under the supervision of a check pilot, including the | [Reestablish recency of experience by completing at least X takeoffs and X landings in the base aircraft and X takeoffs and X landings in the designated related aircraft under the supervision of a check pilot including the  |  |

|   |                                 | <i>following: at least one takeoff with a simulated failure of the most critical powerplant, at least one landing from an ILS approach to the lowest ILS minimums authorized for the certificate holder, and at least one landing to a full stop.]</i> | <i>following: at least one takeoff with a simulated failure of the most critical powerplant, at least one landing from an ILS approach to the lowest ILS minimums authorized for the certificate holder, and at least one landing to a full stop.]</i> |  |
|---|---------------------------------|--|--|--|
| <b>Request for Deviation from the Proficiency Check Requirements of § 121.441</b> |                                 |  |  |  |
| Provision   | Flightcrew Member Duty Position | Category of Training   | 14 CFR Proficiency Check Requirements  | Proposed Proficiency Check Requirements  |
| <i>[121.441(a)]</i>   | <i>[Pilot in Command]</i>       | <i>[Recurrent]</i>   | <i>[Proficiency check within the preceding 12 calendar-months including at least the procedures and maneuvers set forth in part 121, appendix F.]</i>  | <i>[Proficiency check within the preceding X calendar-months including at least the procedures and maneuvers set forth in part 121, appendix F.]</i> |
| <i>[121.441(b)(1)]</i>  | <i>[Second in Command]</i>      | <i>[Transition]</i>  | <i>[Proficiency check must include at least the procedures and maneuvers set forth in part 121, appendix F.]</i>   | <i>[Proficiency check will include the following procedures and maneuvers:...]</i>   |

**Figure 3-189. Sample OpSpec A005 Authorizing Deviations from §§ 121.434, 121.439, and 121.441**

A005. Exemptions and Deviations.

a. The certificate holder is authorized to conduct operations in accordance with the provisions, conditions, and/or limitations set forth in the following exemptions and deviations issued in accordance with Title 14 of the Code of Federal Regulations (14 CFR). The certificate holder is not authorized and shall not conduct any operations under the provisions of any other exemptions and/or deviation issued under 14 CFR.

b. Exemptions.

| Exemption Number | Date of Expiration | Remarks and/or References |
|------------------|--------------------|---------------------------|
| N/A              | N/A                | N/A                       |

c. Deviations.

| Deviation Authority | Deviation From | Description  | Conditions and Limitations       |
|---------------------|----------------|--|----------------------------------|
| 121.434(a)(4)(i)    | 121.434(c)(3)  | Authorizes a deviation, for a designated related aircraft, from the hours of operating experience and/or number of operating cycles.               | <i>[As specified by AFS-200]</i> |
| 121.434(a)(4)(i)    | 121.434(g)     | Authorizes a deviation, for a designated related aircraft, from the hours of line operating flight time for consolidation of knowledge and skills. | <i>[As specified by AFS-200]</i> |
| 121.439(f)(1)       | 121.439(a)     | Authorizes a deviation, for a designated related aircraft, from the number of takeoffs and landings required to maintain recent experience.        | <i>[As specified by AFS-200]</i> |
| 121.439(f)(1)       | 121.439(b)     | Authorizes a deviation, for a designated related aircraft, from the maneuvers and procedures required to reestablish recency of experience.        | <i>[As specified by AFS-200]</i> |
| 121.441(f)(1)       | 121.441(a)     | Authorizes a deviation, for a designated related aircraft, from the  | <i>[As specified by AFS-200]</i> |

|               |               |   |                                  |
|---------------|---------------|---|----------------------------------|
|               |               | required frequency of a proficiency check.  |                                  |
| 121.441(f)(1) | 121.441(b)(1) | Authorizes a deviation, for a designated related aircraft, from the maneuvers and procedures required during a proficiency check. | <i>[As specified by AFS-200]</i> |

**Figure 3-190. Sample Letter Denying Request for Deviation for Related Aircraft**

ABC Airlines  
 Director of Training  
 1 Park Avenue  
 New York, NY 11001

Dear Ms. Rogers:

This letter is in reference to ABC Airlines' request for deviation from § 121.439(a) for the designated related aircraft Boeing 767 submitted on November 3, 2013.

The Air Transportation Division (AFS-200) denies your request for deviation because ABC Airlines did not submit sufficient data or analysis to support the requested deviation for the designated related aircraft Boeing 767. Since the requested deviation was not consistent with the Flight Standardization Board (FSB) report recommendations, ABC Airlines must submit data or analysis similar to those described in the current edition of Advisory Circular 120-53, Guidance for Conducting and Use of Flight Standardization Board Evaluations.

ABC Airlines may resubmit a request for deviation from § 121.439(a) for the designated related aircraft Boeing 767 after the issues identified above have been addressed.

Principal Operations Inspector

**RESERVED.** Paragraphs 3-1380 through 3-1385.

**VOLUME 3 GENERAL TECHNICAL ADMINISTRATION****CHAPTER 20 CHECK AIRMAN, INSTRUCTOR, AND SUPERVISOR PROGRAMS  
FOR 14 CFR PARTS 121 AND 135 CERTIFICATE HOLDERS****Section 1 General: 14 CFR Part 121, 125, and 135 Certificate Holders**

**3-1386 INTRODUCTION.** This section contains guidance concerning check pilot, check Flight Engineer (FE), air transportation instructor, and air transportation supervisor programs for Title 14 of the Code of Federal Regulations (14 CFR) parts 121, 125, and 135 certificate holders. This section also addresses the roles and purposes of check pilots, check FE, air transportation flight instructors, air transportation ground instructors, and air transportation supervisors. Also, in this section are regulatory requirements, qualifications, and functional responsibilities. Section 2 addresses Federal Aviation Administration (FAA) approval and surveillance of parts 121 and 135 check pilots and check FEs. Section 3 addresses FAA approval and surveillance of part 125 check pilots and check FEs. Section 4 addresses training requirements for parts 121 and 135 check pilots, FEs, and air transportation flight instructors.

**3-1387 REGULATORY REQUIREMENTS.****A. Qualification and Training Requirements for Part 121 Certificate Holders.**

- 1) Part 121, § 121.401(a)(2) requires certificate holders to provide enough qualified ground instructors to conduct the ground training required by part 121.
- 2) Section 121.401(a)(4) requires certificate holders to provide enough flight instructors, check pilots, and check FEs to conduct the flight training and flight checks required by part 121.
- 3) Section 121.401(c) specifies that each instructor, supervisor, check pilot, or check FE responsible for a particular training subject or curriculum segment (including ground and flight training segments and flight checks or competency checks) shall certify as to the proficiency and knowledge of the individuals upon completion of that training or check.
- 4) Section 121.402(a) specifies that each check pilot, check FE, air transportation ground instructor, air transportation flight instructor, or air transportation supervisor must be working for, and under the direct operational control of the certificate holder, another part 121 certificate holder, or a 14 CFR part 142 training center.
- 5) Sections 121.411 and 121.413 specify the qualification and training requirements for check pilots and check FEs.
- 6) Sections 121.412 and 121.414 specify the qualification and training requirements for flight instructors.
- 7) Section 121.421(b) requires that flight attendants (F/A) receive competency checks, given by appropriately qualified air transportation supervisors.

8) Section 121.422(b) requires that aircraft dispatchers receive competency checks, given by appropriately qualified air transportation supervisors.

9) Section 121.434(e) requires that F/As receive Operating Experience (OE) under the supervision of a qualified F/A supervisor.

#### **B. Qualification and Training Requirements for Part 135 Certificate Holders.**

1) Part 135, § 135.323(a)(2) requires certificate holders to provide enough qualified ground instructors to conduct the ground training required by part 135.

2) Section 135.323(a)(4) requires certificate holders to provide enough flight instructors and check pilots to conduct the flight training and flight checks required by part 135.

3) Section 135.323(c) specifies that each instructor, supervisor, or check pilot, responsible for a particular training subject or curriculum segment, (including ground and flight training segments and flight checks or competency checks) shall certify as to the proficiency and knowledge of the individuals upon completion of that training or check.

4) Section 135.324 specifies that each check pilot, air transportation ground instructor, or air transportation flight instructor must be working for, and under the direct operational control of the certificate holder, another part 135 certificate holder, or a part 142 training center.

5) Sections 135.337 and 135.339 specify the qualification and training requirements for check pilots.

6) Sections 135.338 and 135.340 specify the qualification and training requirements for flight instructors.

#### **C. Qualification and Training Requirements for Part 125 Certificate Holders.**

1) Part 125, § 125.295 permits a certificate holder to request approval of a check pilot and check FE.

2) Part 125 certificate holders are not required to provide ground instructors, flight instructors, check pilots, or check FEs.

**3-1388 DEFINITIONS.** For purposes of standardization, the following definitions apply to check pilots, check FEs, air transportation flight and ground instructors, and air transportation supervisors.

**A. Check Pilot/Check Airman.** A check pilot is an airman approved by the FAA who has the appropriate knowledge, training, experience, and demonstrated ability to evaluate and to certify the knowledge and skills of other pilots.

**B. Check FE/Check Airman.** A check FE is an airman approved by the FAA who has the appropriate knowledge, training, experience, and demonstrated ability to evaluate and to certify the knowledge and skills of other FEs.

NOTE: The new terms, “check pilot” and “check FE” are replacing the older term “check airman” in regulations and guidance, and are synonymous with “check airman.”

**C. Air Transportation Flight Instructor.** An air transportation flight instructor is an airman (designated by a part 121 or 135 certificate holder) who has the appropriate knowledge, training, experience, and demonstrated ability to instruct other flightcrew members in a flight training segment (curriculum segment) of that certificate holder’s training program.

NOTE: An air transportation flight instructor is not required to hold an FAA Flight Instructor Certificate when instructing in part 121 or 135 training programs.

**D. Air Transportation Ground Instructor.** An air transportation ground instructor is a person selected and qualified by a part 121 or 135 certificate holder who has the appropriate knowledge, experience, training, and demonstrated ability to instruct crewmembers or aircraft dispatchers in curriculum segments other than flight training.

NOTE: An air transportation ground instructor is not required to hold an FAA Flight Instructor Certificate or FAA Ground Instructor Certificate when instructing in part 121 or 135 training programs.

**E. Air Transportation Supervisor.** For purposes of this handbook, an air transportation supervisor is an individual employed by a part 121 certificate holder, who is authorized by that certificate holder to conduct competency checks for F/As or aircraft dispatchers, as applicable. F/A air transportation supervisors may also supervise F/A OE.

**3-1389 CHECK PILOT AND CHECK FE ROLE AND CHARACTERISTICS.** The role of the check pilot and check FE is to ensure that the flightcrew member has met competency standards before the check pilot or check FE releases the flightcrew member from training and to ensure that the flightcrew member maintains those standards while remaining in line service. Effective training and use of check pilots and check FEs by a certificate holder ensures that flightcrew members are standardized in their job performance. A check pilot or check FE must be knowledgeable in the applicable requirements of 14 CFR parts 61, 63, 91, 110, 117, 119, 121, 125, 135, other applicable FAA policies, safe operating practices, and the certificate holder’s policies and procedures. A check pilot or check FE must have achieved and maintained a favorable record as a flightcrew member. Once approved, the check pilot’s or check FE’s manner and professional reputation should always reflect positively upon the employer and the FAA.

NOTE: Under current regulations, there is no specified normal term of expiration for approvals of check pilots and check FEs. At his or her discretion, the principal operations inspector (POI) may grant, limit, or withdraw a check pilot’s or check FE’s approval.

**3-1390 CLASSIFICATIONS OF CHECK PILOTS AND CHECK FEs.** There are six classifications, five of which relate to pilots and one of which relates to FE. The six classifications are:

- Proficiency Check Pilot–Aircraft.
- Proficiency Check Pilot–Simulator.
- Line Check Pilot–All Seats (left, right, and observer’s).
- Line Check Pilot–Observer’s Seat Only.
- Check Pilot–All Checks.
- Check FE.

**3-1391 PROFICIENCY CHECK PILOT—AIRCRAFT (INCLUDES FLIGHT SIMULATION TRAINING DEVICES (FSTD)).**

**A. Eligibility.** For initial and continuing approval as a proficiency check pilot (aircraft), an airman must meet the following eligibility requirements:

1) Hold the required airman certificate and ratings to serve as the pilot in command (PIC) of the specific aircraft in operations under part 121, 125, or 135, as applicable.

2) Hold a Class I or Class II medical certificate, as appropriate, if serving as a required flightcrew member.

- If not serving as a required flightcrew member, part 135 check pilots must hold at least a Class III medical certificate.
- Part 121 and 125 check pilots not serving as a required flightcrew member are not required to hold a medical certificate.

3) Be less than 65 years of age, if serving as a pilot flightcrew member in operations under part 121.

4) Have completed the certificate holder’s check pilot training required by §§ 121.411, 121.413, and part 121 appendix H, or by §§ 135.337 and 135.339, as applicable. ( See Section 4 of this chapter for guidance on check pilot training).

5) Have completed the training and currency requirements to serve as the PIC for that certificate holder, including ground and flight training, proficiency or competency checks, and 90-day recency of experience.

6) For part 121 and 135 check pilots, at least once every 24 calendar-months, satisfactorily demonstrate the ability to conduct a check or supervise OE, as applicable, to an FAA inspector or aircrew program designee (APD) employed by the certificate holder. The demonstration may be accomplished in an aircraft in-flight, in a full flight simulator (FFS), in a flight training device (FTD), or in a combination, as appropriate.

7) Be specifically approved by the FAA.

**B. Authorized Activities.** A classification of proficiency check pilot (aircraft) authorizes a check pilot to conduct the following activities in an aircraft or FSTD (subject to the authorizations and limitations shown in the letter of approval):

1) For part 121 check pilots, pilot flightcrew member proficiency checks conducted in a qualification curriculum segment of the certificate holder's training program, from either pilot seat or observer's seat.

2) For part 125 and 135 check pilots, pilot flightcrew member proficiency or competency checks conducted in a qualification curriculum segment of the certificate holder's training program, from either pilot seat or observer's seat.

3) Flight instruction in the certificate holder's training program, from either pilot seat or observer's seat.

4) Supervision of the reestablishment of recency of experience. Parts 121 and 125 require a check pilot reestablish a pilot's recency of experience (part 135 does not have such a requirement).

5) Special checks conducted as a qualification curriculum segment of the certificate holder's training program, provided the check pilot is qualified in the specific activity for which he or she is conducting the special check (such as Category II Approach (CAT II) and Category III Approach (CAT III) operations).

6) Certification of the satisfactory proficiency and knowledge of flightcrew members after completion of a flight training curriculum segment, flight training module, or proficiency or competency check.

### **3-1392 PROFICIENCY CHECK PILOT—SIMULATOR.**

**A. Eligibility.** To be eligible for initial and continuing approval as a proficiency check pilot (simulator), an airman must meet the following eligibility requirements:

1) Hold the required airman certificate and ratings, except medical certificate, to serve as the PIC of the specific aircraft in operations under parts 121, 125, or 135, as applicable.

2) Have completed the certificate holder's check pilot training as required by §§ 121.411, 121.413, and part 121 appendix H, or by §§ 135.337 and 135.339, as applicable. (See Section 4 of this chapter for guidance on check pilot training).

3) Have completed the training requirements to serve as the PIC for the certificate holder including ground and flight training and the required proficiency or competency checks.

4) For part 121 check pilots, within the preceding 12-month period, fly at least two flight segments as a required flightcrew member for the type airplane, or complete an approved line observation program. See paragraph 3-1404 for guidance on line observation programs.

5) For part 135 check pilots, within the preceding 12-month period, fly at least two flight segments as a required flightcrew member for the type, class, category aircraft, or complete an approved line observation program. See paragraph 3-1404 for guidance on line observation programs.

6) For part 121 and 135 check pilots, at least once every 24 calendar-months, satisfactorily demonstrate the ability to conduct a check or supervise OE, as applicable, to an FAA inspector or APD employed by the certificate holder. The demonstration may be accomplished in an aircraft in-flight, in a FFS, in an FTD, or in a combination, as appropriate.

7) Be specifically approved by the FAA.

**B. Authorized Activities.** Approval as a proficiency check pilot (simulator) authorizes a check pilot to conduct the following activities in a FSTD only (subject to the authorizations and limitations shown in the letter of approval):

1) For part 121 check pilots, pilot flightcrew member proficiency checks conducted in a qualification curriculum segment of the certificate holder's training program.

2) For part 125 and 135 check pilots, pilot flightcrew member proficiency or competency checks in a qualification curriculum segment of the certificate holder's training program.

3) Flight instruction in the certificate holder's training program.

4) Supervision of the reestablishment of recency of experience. Parts 121 and 125 require a check pilot reestablish a pilot's recency of experience. Part 135 does not have such a requirement.

5) Special checks conducted as a qualification curriculum segment of the certificate holder's training program, provided the check pilot is qualified in the specific activity for which he or she is conducting the special check (such as CAT II and CAT III operations).

6) Certification of the satisfactory proficiency and knowledge of flightcrew members, after completion of a flight training curriculum segment, flight training module, proficiency or competency check.

### **3-1393 LINE CHECK PILOT—ALL SEATS (LEFT PILOT SEAT, RIGHT PILOT SEAT, AND OBSERVER'S SEAT), PARTS 121 AND 135.**

**A. Eligibility.** For initial and continuing approval as a line check pilot (all seats), an airman must meet the following eligibility requirements:

1) Hold the required airman certificate and ratings to serve as the PIC of the specific aircraft in operations under part 121 or 135, as applicable.

2) Hold a Class I or II medical certificate, as appropriate, if serving as a required flightcrew member. If not serving as a required flightcrew member, hold a Class III medical certificate.

3) Be less than 65 years of age, if serving as a pilot flightcrew member in operations under part 121.

4) Have completed the training and currency requirements to serve as the PIC for that certificate holder, including ground and flight training, proficiency or competency checks, and 90-day recent experience.

5) Have completed the certificate holder's check pilot training required by §§ 121.411 and 121.413, or §§ 135.337 and 135.339, as applicable. See Section 4 of this chapter for guidance on check pilot training.

6) At least once every 24 calendar-months, satisfactorily demonstrate the ability to conduct a check or supervise OE, as applicable, to an FAA inspector or APD employed by the certificate holder. The demonstration may be accomplished in an aircraft in-flight, in a FFS, in an FTD, or in a combination, as appropriate.

7) Be specifically approved by the FAA.

**B. Authorized Activities.** Approval as a line check pilot (all seats) authorizes a check pilot to conduct the following activities in an aircraft (subject to the authorizations and limitations shown in the letter of approval):

1) Pilot flightcrew member line checks from either pilot seat or the observer's seat.

2) Training and checking in special operations as a module of the certificate holder's approved training program, provided that the check pilot is qualified in the specific operations for which he or she is conducting training or checking (special airports or international routes).

3) Supervision of pilot flightcrew member OE from either pilot seat.

4) For part 121 check pilots, supervision of FE flightcrew member OE from the observer's seat.

NOTE: The check pilot may conduct supervision of pilot flightcrew member OE from the observer's seat, in accordance with § 121.434(c)(ii), for a transitioning PIC if the transitioning PIC has made at least two takeoffs and landings in the type aircraft used; and has satisfactorily demonstrated to the check pilot that he is qualified to perform the duties of a PIC for that type aircraft.

**3-1394 LINE CHECK PILOT—OBSERVER’S SEAT ONLY, PARTS 121 AND 135.**

**A. Eligibility.** For initial and continuing approval as a line check pilot (observer’s seat only), an airman must meet the following eligibility requirements:

1) Hold the required airman certificate and ratings to serve as the PIC of the specific aircraft in operations under part 121 or 135, as applicable.

2) For part 135 check pilots, hold at least a Class III medical certificate. Part 121 check pilots are not required to hold a medical certificate.

3) Have completed the training and currency requirements to serve as the PIC for that certificate holder, including ground and flight training, proficiency or competency checks, and the 90-day recent experience.

4) Have completed the certificate holder’s check pilot training required by §§ 121.411 and 121.413, or §§ 135.337 and 135.339, as applicable. See Section 4 of this chapter for guidance on check pilot training.

5) At least once every 24 calendar-months, satisfactorily demonstrate the ability to conduct a check or supervise OE, as applicable, to an FAA inspector or APD employed by the certificate holder. The demonstration may be accomplished in an aircraft in-flight, in a FFS, in an FTD, or in a combination, as appropriate.

6) Be specifically approved by the FAA.

NOTE: The certificate holder must have procedures published in the operations manual to be followed in the event a line check pilot (observer’s seat only) determines that a flightcrew member’s performance does not meet standards that would allow the individual to continue to operate the aircraft. The check pilot must not allow the flightcrew member to continue the flight or trip. If the line check pilot (observer’s seat only) does not meet the requirements to substitute for the flightcrew member, specific alternative procedures must be followed.

**B. Authorized Activities.** Approval as a line check pilot (observer’s seat only) authorizes a check pilot to conduct the following activities in an aircraft (subject to the authorizations and limitations shown in the letter of approval):

1) Pilot flightcrew member line checks from the observer’s seat.

2) Training and checking in special operations as a module of the certificate holder’s approved training program from the observer’s seat, provided that the check pilot is qualified in the specific operations for which he or she is conducting training, or checking (such as special airports and international routes).

3) For part 121 check pilots, supervision of FE flightcrew member OE from the observer’s seat.

**3-1395 CHECK PILOT—ALL CHECKS.**

**A. Eligibility.** For initial and continuing approval as a check pilot (all checks) an airman must meet the eligibility requirements for a proficiency check pilot (aircraft), and for a line check pilot (all seats), in accordance with paragraphs 3-1391 and 3-1393.

**B. Authorized Activities.** Approval as a check pilot (all checks) authorizes a check pilot to conduct all authorized activities of a proficiency check pilot (aircraft), and a line check pilot (all seats), in accordance with paragraphs 3-1391 and 3-1393.

**3-1396 CHECK FE, PARTS 121 and 125.** The POI can approve a check FE to conduct activities in an aircraft and/or FSTD.

**A. Eligibility.** For initial and continuing approval as a check FE, an airman must meet the following eligibility requirements:

1) Hold the required airman certificate and ratings to serve as an FE on the specific aircraft in operations under part 121 or 125, as applicable.

2) Hold at least a Class II medical certificate if serving as a required flightcrew member. If not serving as a required flightcrew member, check FEs are not required to hold a medical certificate.

3) Have completed the certificate holder's check FE training required by §§ 121.411 and 121.413, and part 121 appendix H, as applicable. See Section 4 of this chapter for guidance on check FE training.

4) Have completed the training requirements to serve as an FE for the certificate holder in the specific aircraft, including ground and flight training, and flight checks.

5) For part 121 check FEs (only authorized to conduct checking activities in a FSTD), within the preceding 12-month period, fly at least two flight segments as a required flightcrew member for the type aircraft, or complete an approved line observation program. See paragraph 3-1404 for guidance on line observation programs.

6) For part 121 check FEs, at least once every 24 calendar-months, satisfactorily demonstrate the ability to conduct a check or supervise OE to an FAA inspector or APD employed by the certificate holder. The demonstration may be accomplished in an aircraft in-flight, in a FFS, in an FTD, or in a combination, as appropriate.

7) Be specifically approved by the FAA.

**B. Authorized Activities.** Approval as a check FE authorizes an airman to conduct the following activities (subject to the authorizations and limitations shown in the letter of approval):

1) FE flight checks conducted as a qualification curriculum segment in the certificate holder's training program.

2) Flight instruction of FEs in the certificate holder's training program.

3) For part 121 check FEs, supervision of FE OE.

4) FE flight checks to reestablish qualification in accordance with § 121.453.

5) Special checks conducted as a qualification curriculum segment of the certificate holder's training program, provided the check FE is qualified in the specific activity for which he or she is conducting the special check (such as CAT II and CAT III operations).

6) Certification of the satisfactory proficiency and knowledge of flightcrew members after completion of a flight training curriculum segment, flight training module, or flight check.

### **3-1397 AIR TRANSPORTATION INSTRUCTOR ROLE AND CHARACTERISTICS.**

An air transportation instructor is a person employed by a certificate holder for the purpose of training crewmembers and aircraft dispatchers in a part 121 or 135 certificate holder's approved training program. Air transportation instructors must be knowledgeable in the applicable requirements of 14 CFR parts 61, 63, 65, 91, 110, 117, 119, 121, and 135, other applicable FAA policies and safe operating practices, and the certificate holder's policies and procedures. An air transportation instructor should possess effective communication skills and a manner that always reflects professionalism and a positive attitude toward safety.

**3-1398 AIR TRANSPORTATION FLIGHT INSTRUCTOR—AIRCRAFT.** An air transportation flight instructor (aircraft) may be a pilot instructor, an FE instructor, or both, and may conduct flight training in aircraft or FSTD.

**A. Eligibility.** For initial and continuing authorization as a flight instructor (aircraft), an airman must meet the following eligibility requirements:

1) Hold the airman certificate and ratings required to serve as the PIC or FE, as applicable, on the specific aircraft in operations under part 121 or 135, as applicable.

2) For part 121 pilot instructors, hold a Class I or II medical certificate, as appropriate, if serving as a required flightcrew member. If not serving as a required flightcrew member, part 121 pilot instructors are not required to hold a medical certificate.

3) For part 135 pilot instructors, hold at least a Class III medical certificate, if serving as a required flightcrew member. If not serving as a required flightcrew member, part 135 pilot instructors are not required to hold a medical certificate.

4) For FE instructors, hold a Class II medical certificate if serving as a required flightcrew member. If not serving as a required flightcrew member, FE instructors are not required to hold a medical certificate.

5) Be less than 65 years of age, if serving as a pilot flightcrew member in operations under part 121.

6) For pilot instructors, have completed the training and currency requirements to serve as the PIC for the certificate holder, including ground and flight training, proficiency or competency checks, and 90-day recent experience.

7) For FE instructors, have completed the training requirements to serve as an FE for the certificate holder, including ground and flight training and flight checks.

8) Have completed the certificate holder's flight instructor training required by §§ 121.412, 121.414 and part 121 appendix H, or §§ 135.338 and 135.340, as applicable. See Section 4 of this chapter for guidance on flight instructor training.

9) At least once every 24 calendar-months, satisfactorily demonstrate the ability to conduct flight instruction to an FAA inspector, check pilot, check FE, or APD employed by the certificate holder. The demonstration may be accomplished in an aircraft, a FFS, an FTD, or in a combination, as appropriate. Initial evaluation should include evaluation in an aircraft.

**B. Authorized Activities.** An air transportation flight instructor (aircraft), when authorized by the certificate holder, may conduct the following flight instruction activities in an aircraft or FSTD:

1) Flight instruction in the certificate holder's approved training program from either pilot seat or observer's seat.

2) Certification of the satisfactory proficiency and knowledge of flightcrew members after completion of a flight training curriculum segment or flight training module.

**3-1399 AIR TRANSPORTATION FLIGHT INSTRUCTOR—SIMULATOR.** An air transportation flight instructor (simulator) may instruct in a FSTD and may be a pilot instructor, an FE instructor, or both.

**A. Eligibility.** For initial and continuing authorization as a flight instructor (simulator), an airman must meet the following eligibility requirements:

1) Hold the airman certificate and ratings, except medical certificate, required to serve as a PIC or FE, as applicable, on the specific aircraft in operations under part 121 or 135, as applicable.

2) Have completed the certificate holder's flight instructor training required by §§ 121.412, 121.414, and part 121 appendix H, or §§ 135.338 and 135.340, as applicable. See Section 4 of this chapter for guidance on flight instructor training.

3) For pilot instructors, have completed the training requirements to serve as the PIC for the certificate holder, including ground and flight training and the required proficiency or competency checks.

4) For FE instructors, have completed the training requirements to serve as an FE for the certificate holder, including ground and flight training, and flight checks.

5) For part 121 instructors, within the preceding 12-month period, fly at least two flight segments as a required flightcrew member for the type airplane or complete an approved line observation program. See paragraph 3-1404 for guidance on line observation programs.

6) For part 135 instructors, within the preceding 12-month period, fly at least two flight segments as a required flightcrew member for the type, class, or category aircraft or complete an approved line observation program. See paragraph 3-1404 for guidance on line observation programs.

7) At least once every 24 calendar-months, satisfactorily demonstrate the ability to conduct flight instruction to an FAA inspector, check pilot, check FE, or APD employed by the certificate holder. The demonstration may be accomplished in a FFS, an FTD, or both, as appropriate.

**B. Authorized Activities.** An air transportation flight instructor (simulator), when authorized by the certificate holder, may conduct the following flight instruction activities in a FSTD only:

- 1) Flight instruction in the certificate holder's approved training program.
- 2) Certification of the satisfactory proficiency and knowledge of a flightcrew member, after completion of a flight training curriculum segment or flight training module.

### **3-1400 AIR TRANSPORTATION GROUND INSTRUCTOR.**

**A. Training and Qualification.** An individual must meet the certificate holder's training and qualification requirements to conduct ground instruction.

**B. Authorized Activities.** An air transportation ground instructor, when qualified and authorized by the certificate holder, may conduct the following:

- 1) Ground instruction in the certificate holder's approved training program.
- 2) Certification of the satisfactory proficiency and knowledge of crewmembers and aircraft dispatchers after completion of a ground training curriculum segment or module.

**C. Training and Qualification Records.** The certificate holder must maintain documentation of the training and qualification for each air transportation ground instructor, and must make that documentation available for inspection by the FAA upon request.

### **3-1401 AIR TRANSPORTATION SUPERVISOR ROLE AND CHARACTERISTICS.**

The role of the air transportation supervisor is to ensure that the F/A or aircraft dispatcher meets the competency standards by demonstrating knowledge and ability in the training subjects required by part 121. An air transportation supervisor must be knowledgeable in the applicable requirements of parts 65, 91, 110, 117, 119, 121, and other applicable FAA policies, safe operating practices, and the certificate holder's policies and procedures.

**3-1402 AIR TRANSPORTATION SUPERVISOR—F/A.**

**A. Training and Qualification.** An air carrier operating under part 121 engaged in passenger-carrying operations must establish and maintain a program to train and qualify F/A air transportation supervisors. An individual must successfully complete the appropriate training curriculum and the required competency check to qualify as an F/A air transportation supervisor. To maintain qualification, F/A air transportation supervisors must successfully complete recurrent training, including competency checks.

**B. Authorized Activities.** An F/A air transportation supervisor, when qualified and authorized by the certificate holder, may conduct the following:

- 1) Initial and recurrent F/A competency checks.
- 2) Supervision of F/A OE.
- 3) Certification of the satisfactory proficiency and knowledge of F/As after completion of the competency check.

**C. Training and Qualification Records.** The certificate holder must maintain documentation of the training and qualification for each F/A air transportation supervisor, and must make that documentation available for inspection by the FAA upon request.

**3-1403 AIR TRANSPORTATION SUPERVISOR—AIRCRAFT DISPATCHER.**

**A. Training and Qualification.** A certificate holder conducting part 121 domestic and/or flag operations must establish and maintain a program to train and qualify aircraft dispatcher air transportation supervisors. An individual must be current and qualified as an aircraft dispatcher for the certificate holder to qualify as an aircraft dispatcher air transportation supervisor. For the purposes of this order, “current and qualified” with respect to an aircraft dispatcher air transportation supervisor means an individual has successfully completed all training and qualification requirements in §§ 121.415, 121.422, and 121.427 (including competency checks), and any on-the-job training (OJT) requirements of the certificate holder.

NOTE: To maintain qualification as an aircraft dispatcher air transportation supervisor, an individual must remain current and qualified as an aircraft dispatcher by successfully completing recurrent training, including competency checks.

**B. Authorized Activities.** An aircraft dispatcher air transportation supervisor, when qualified and authorized by the certificate holder, may conduct the following:

- 1) Initial and recurrent aircraft dispatcher competency checks.
- 2) Certification of the satisfactory proficiency and knowledge of aircraft dispatchers after completion of the competency check.

**C. Staffing.** In order to ensure continued qualification of each aircraft dispatcher air transportation supervisor, part 121 certificate holders should employ at least two aircraft dispatcher air transportation supervisors. In rare cases, such as initial certification of an air carrier, or sudden temporary staff changes leading to the employment of only one aircraft dispatcher air transportation supervisor, an Aviation Safety Inspector-Aircraft Dispatcher (ASI-AD) may administer an initial or recurrent competency check.

**D. Training and Qualification Records.** The certificate holder must maintain documentation of the training and qualification for each aircraft dispatcher air transportation supervisor, and must make that documentation available for inspection by the FAA upon request.

**3-1404 LINE OBSERVATION PROGRAM.** The preferred method of compliance with the requirements of §§ 121.411(f), 121.412(f), 135.337(f), and 135.338(f) is to have flight instructors, check pilots, and check FEs fly a minimum of two flight segments during actual line operations in the aircraft. In lieu of actual line flying, flight instructors, check pilots, and check FEs can complete an approved line observation program. There are two types of line observation programs that a POI may approve; line observation from the observer's seat or a Line-Operational Simulation (LOS) program.

**A. Line Observation from the Observer's Seat.** A certificate holder may comply with §§ 121.411(f)(2), 121.412(f)(2), 135.337(f)(2), and 135.338(f)(2) by requiring flight instructors, check pilots, and check FEs to complete line observation from the observer's seat. Prior to approving this type of line observation program, POIs must ensure the certificate holder's proposed program requires each flight instructor, check pilot, and check FE to complete a minimum of two flight segments in the observer's seat within each 12-month period.

**B. LOS Program.** A certificate holder may comply with §§ 121.411(f)(2), 121.412(f)(2), 135.337(f)(2), or § 135.338(f)(2) by conducting an LOS program. Prior to approving an LOS program, POIs must ensure the certificate holder's proposed program complies with the following requirements:

**1) Ground Training.** Ground training must include the following subjects:

a) Clearances. Duties of a check pilot, check FE, or flight instructor with regards to the use of air traffic control (ATC) clearances in a training environment.

- Format of clearances to accurately simulate ATC.
- Ability to provide timeliness of responses typical of controllers.
- Using clearances accurately to create a more realistic scenario in the training environment.
- Accurately providing realistic clearances to enhance instructor credibility and professionalism.
- Using clearances accurately to simulate correct ATC spacing and controller knowledge of aircraft system performance parameters.

b) Terminology.

- Common ATC terminology variations.
- International language and terminology considerations (if applicable).
- Realistic use in the training environment.

c) Vectoring. Appropriate use and training benefits/pitfalls.

- Commonly misused vectoring practices.
- Training benefits and importance of correct vectoring to preserve realism.
- Negative training and associated impact of inaccurate or unrealistic vectors/practices.

d) International Civil Aviation Organization (ICAO) Differences. Applicable for those certificate holders that provide instruction for international operations.

- Variations between FAA and ICAO terminology.
- Foreign airport training and practices.
- Transition altitudes.

e) Runway (RW)/Taxiway Signage, Surface Movement Guidance and Control System (SMGCS), etc.

- Recent changes in signage and markings.
- Large airports/small airport variances.
- RW markings.
- Taxiway markings.
- Ground and approach lighting systems.
- SMGCS: who must comply, under what weather conditions it applies, and how to comply with clearances and procedures.

**2) Flight Training.** Training must be conducted in a FFS and will be designed as an LOS event intended to provide replication of operations within the National Airspace System (NAS). It must be designed to realistically simulate (within the limitations of flight simulator technology) a view of the ATC environment that flightcrews may encounter when operating in the NAS. Flight training must include the following events, as applicable, that are tailored to reflect the operational environment of the certificate holder:

- Normal operations;
- ATC normal, abnormal, and emergency operations;
- Low visibility taxi and takeoff (use of enhanced taxiway markings and ATC interactions);
- Short approach request;
- Tailwind landing request <10 knots;
- Speed restrictions and expedite requests (e.g., 180 knots to the marker);
- Expedite to an altitude (may be up or down);
- Unexpected clearance to a new fix (flight management system (FMS) exercise);

- Visual approach;
- Special approaches (Required Navigation Performance (RNP) subject to special requirement, Localizer Performance with Vertical Guidance (LPV), precision runway monitor (PRM) etc.);
- Traffic alert;
- Traffic Alert and Collision Avoidance System (TCAS) alert;
- Uncontrolled field approach;
- Special airport operation;
- Special route authorizations;
- RNP approaches and departures;
- Equipment failures affecting navigation reliability; and
- Other events that the operator may deem appropriate.

**3) LOS Program Training Schedule.** The certificate holder must develop sufficient LOS scenarios to ensure flight instructors, check pilots, and check FEs do not repeat the same scenario within four training cycles as defined within their approved training program. If the ground and flight training segments occur more than 30 days apart, then the operator must maintain a separate tracking record for each segment. Each segment will then have its own 12-month currency cycle.

**RESERVED.** Paragraphs 3-1405 through 3-1420.

**VOLUME 3 GENERAL TECHNICAL ADMINISTRATION****CHAPTER 20 CHECK AIRMAN, INSTRUCTOR, AND SUPERVISOR PROGRAMS  
FOR TITLE 14 CFR PART 121 AND 135 CERTIFICATE HOLDERS****Section 2 Check Pilot and Check Flight Engineer Approval and Surveillance****3-1421 GENERAL.****A. Program Tracking and Reporting Subsystem (PTRS) Codes.**

- Check Pilot: 1346.
- Check Flight Engineer (FE): 1347.

**B. Procedures.**

1) This section addresses procedures for approval and surveillance of check pilots and check FEs. All check pilots and check FEs must be approved by an operator's principal operations inspector (POI). Approval is based on a candidate:

- Having the proper certificates and ratings;
- Being qualified in accordance with the operator's approved initial, transition, or upgrade training program;
- Having completed the operator's approved check pilot or check FE training program for the appropriate check functions; and
- Having demonstrated the ability to conduct a check and to evaluate the performance of flightcrew members to the satisfaction of a Federal Aviation Administration (FAA) inspector.

2) The check pilot and check FE approval process follows the five phases described below.

**3-1422 PHASE ONE—OPERATOR FAMILIARIZATION WITH REQUIREMENTS AND LETTER OF REQUEST.**

**A. Beginning the Approval Process.** The first phase of the check pilot and check FE approval process involves a discussion between the operator and the POI. The POI should ensure that the operator understands the regulatory check pilot and check FE training requirements and that a candidate must satisfactorily demonstrate the ability to perform check functions to an FAA inspector before approval. The POI should also ensure that the operator is prepared to submit the necessary documentation to initiate the approval process, which is as follows:

**B. Required Information.** The letter of request constitutes the operator's nomination. It originates from the operator, not a training center, candidate, or some other party. It includes:

- The candidate's full name,
- Business address,
- Applicable airman's certificate number,

- Current flightcrew member position,
- Requested check pilot or check FE classification,
- Aircraft type,
- Brief résumé of the candidate's aviation background and experience,
- Copies of the candidate's appropriate airman certificates,
- Copy of the candidate's medical certificate (not required if the only classifications requested are proficiency check pilot—simulator or line check pilot—observer's seat only), and
- Copies of the candidate's training records, including his or her initial, transition, or upgrade training in requested aircraft type; record of most recent applicable recurrent training; and record of check pilot or check FE training.

A POI may require that this information be expanded to suit circumstances.

**3-1423 PHASE TWO—SUBMISSION OF DOCUMENTATION.** Phase two begins when the operator submits the documentation listed in paragraph 3-1422 to the POI for evaluation. The operator may transmit this submission by conventional mail, email, fax, or by other means mutually acceptable to the operator and the POI. The POI will initially review the information to determine if the candidate meets the basic qualification requirements for the classification of check pilot or check FE approval sought. (See Volume 3, Chapter 20, Section 1, General: 14 CFR Part 121, 125, and 135 Certificate Holders.)

**A. Unacceptable Submission.** If the operator's submission is unacceptable, the POI should return the submitted documentation with a statement of the reason for nonacceptance.

**B. Acceptable Submission.** If the operator's submission is acceptable, the POI should initiate phase three.

**3-1424 PHASE THREE—REVIEW OF DOCUMENTATION.**

**A. Verification.** The POI will verify the candidate's certificates and background using the enhanced Vital Information Database (eVID), the Safety Performance Analysis System (SPAS), PTRS and local office procedures. The POI will then create a file for the individual in the check airman section of eVID.

Creation of the eVID file at this point in the process will allow for documentation of subsequent action regarding the individual without having the records rejected. During the upload/download process, check pilot and check FE surveillance records are cross-checked (last name and certificate number) against the check airman ancillary file in the eVID file for the operator.

**B. Training Requirements.** Before the POI can evaluate a candidate for approval as a check pilot or check FE, all required training must be completed. The candidate's training records must show satisfactory completion of initial, transition, or upgrade training and all training required under the operator's approved check pilot or check FE training program for the specified classification. The approved training program must contain all training required by Title 14 of the Code of Federal Regulations (14 CFR) part 121, §§ 121.411, 121.413, and

part 121 appendix H, or 14 CFR part 135, §§ 135.337 and 135.339 that is applicable to the approval being sought. When the candidate's records show that the candidate has previously completed a required curriculum segment, the segment does not have to be repeated.

**C. Nonqualification.** If, after reviewing the documentation, the POI determines that the candidate does not qualify as a check pilot or check FE, the POI will provide the operator with a statement of the reason for nonacceptance.

**3-1425 PHASE FOUR—CHECK PILOT AND CHECK FE EVALUATION.** In order to evaluate a candidate effectively, inspectors must become thoroughly familiar with the operator's procedures. Inspectors must also become familiar with any special regulatory requirements affecting the operator, such as special conditions contained in the operations specifications (OpSpec) and exemptions.

**A. Choosing Airmen as Subjects.** The inspector conducting an evaluation for an original check pilot or check FE approval must observe the candidate conducting an actual check. The purpose of the evaluation is to ensure that the candidate has achieved the required skills for briefing, evaluating, and debriefing a flightcrew member. The flightcrew member receiving the check should be a line flightcrew member who is due for an evaluation. The flightcrew member will not be an instructor, check pilot, or check FE unless previous approval has been received from the POI. Such approval is reserved for unusual circumstances.

**B. Candidate's Flying Skills.** Except for an initial cadre approval, an evaluation does not entail an evaluation of the candidate's flying skills in a flightcrew member duty position. An operator should not request approval of an individual as a check pilot or check FE when there is any question about the individual's flying skills in a flightcrew member duty position. Should the POI have reason to question a candidate's proficiency, the evaluation will not be conducted until the candidate's proficiency is verified. An acceptable way to verify the candidate's proficiency is to check the candidate. An inspector may conduct a proficiency check, a competency check, a flight check, or a line check of the candidate, scheduled at some time before the official evaluation. (Such checks are not routinely required.)

**C. Satisfactory Evaluation.** If the inspector determines that a candidate meets criteria for the requested approval, the inspector will inform the candidate that a recommendation of approval will be reported to the POI. In this case, the candidate will certify the proficiency of the flightcrew member receiving the check and complete the necessary recordkeeping tasks. The POI may permit the new check pilot or check FE to be scheduled immediately as a check pilot or check FE, even though processing of the letter of approval has not been completed, provided that a PTRS entry has been completed to document the satisfactory evaluation.

**D. Unsatisfactory Evaluation.** If the inspector determines a candidate does not qualify for the requested approval, the inspector will inform the candidate that approval will not be granted. In such a case, the inspector must determine whether the flightcrew member receiving the check performed satisfactorily, and must certify the flightcrew member's proficiency and complete the necessary records.

The failure of a candidate is uncommon and usually ends a candidate's eligibility for check pilot or check FE status. In rare circumstances, the POI may allow a reevaluation. In such a case, the operator must conduct sufficient additional training, recertify the candidate's proficiency, and arrange to have another evaluation conducted by an FAA inspector.

**E. Content of Check Pilot or Check FE Evaluation.** The following guidance applies to an inspector's evaluation in respect to each of the six classifications of check pilots and check FE.

1) **Proficiency Check Pilot—Aircraft.** An inspector must evaluate this candidate while the candidate conducts a proficiency check or competency check in an aircraft in-flight. The inspector should observe the candidate conducting the entire check in the aircraft. The candidate should be evaluated on his/her ability to evaluate an individual while, at the same time, performing the flightcrew member activities normally associated with the seat the check pilot candidate occupies. With the approval of POI, the inspector may observe part of the check in the aircraft and the remainder in a flight simulation training device (FSTD).

2) **Proficiency Check Pilot—Simulator.** An inspector must evaluate this candidate while the candidate conducts the FSTD segment of an actual proficiency check, or competency check, as applicable. The candidate should be evaluated on his/her ability to evaluate an individual while, at the same time, demonstrating proficiency in operating the FSTD. Time management and the ability to adapt to events that might disrupt a planned sequence of events should be considered. If the entire proficiency check or competency check can be accomplished in a full flight simulator (FFS), the candidate must be observed conducting the entire check.

3) **Line Check Pilot—All Seats.** An inspector will evaluate this candidate while the candidate conducts an actual line check from either pilot seat. Satisfactory performance will also permit the candidate to conduct a line check from the forward observer's seat, during Line-Oriented Flight Training (LOFT), during revenue service or during nonrevenue service. A candidate for line check pilot—all seats must be qualified to be the pilot in command (PIC) for that operator and hold a first-class medical certificate.

The operator must have procedures published in its operations manual that will be followed in the event that a line check pilot determines that a flightcrew member's performance does not meet standards that would allow the individual to continue to operate the aircraft. The flightcrew member will not be allowed to continue the flight series or trip. If the line check pilot does not possess the appropriate class of medical certificate or is not qualified to substitute for the flightcrew member, specific alternative procedures must be followed.

4) **Line Check Pilot—Observer's Seat Only.** An inspector must evaluate this candidate while he or she conducts an actual line check from the forward observer's seat. If the aircraft is equipped with more than one observer's seat, the evaluation must be conducted in the aircraft. When the evaluation is conducted during revenue service, in an aircraft with only one observer's seat, a candidate who holds a second-class medical certificate, who has not yet reached 65 years of age and is otherwise qualified for part 121 operations (does not apply to

part 135 operations) may be evaluated while conducting a line check from the right pilot seat. In this case, the PIC must be fully qualified and line current. When the evaluation is conducted during nonrevenue operations in an aircraft with only one observer's seat, a candidate who holds at least a third-class medical certificate and who is over 65 years of age and is otherwise qualified for part 121 operations (does not apply to part 135 operations) may be evaluated while conducting a line check from the right pilot seat. If the candidate does not hold a medical certificate and the aircraft is equipped with only one observer's seat, the evaluation may be conducted in a FFS during LOFT. A check pilot who is approved to conduct line checks from the observer's seat and who does not maintain line currency must be observed by an inspector at least once every 24 calendar months. If an evaluation within this time period is not given, the check pilot is not authorized to conduct line checks.

The operator must have procedures published in its operations manual that will be followed in the event that a line check pilot determines that a flightcrew member's performance does not meet standards that would allow the individual to continue to operate the aircraft. The flightcrew member must not be allowed to continue the flight series or trip. If the line check pilot is not qualified (including appropriate medical certificate) to substitute for the flightcrew member, specific alternative procedures must be followed.

**5) Check Pilot—All Checks.** An inspector must evaluate this candidate in accordance with preceding paragraphs. The evaluations for this approval may be treated cumulatively.

An pilot may have been a proficiency check pilot—aircraft for a number of years, and then qualify as a line check pilot—all seats. If the operator does not use FFSs in the training program, then upon satisfactory completion of the line check evaluation, the check pilot could be approved to conduct all of the forgoing checks.

**6) Check FE.** An inspector must evaluate this candidate while the candidate conducts an FE flight check in a FSTD. In normal, abnormal, and emergency procedures, segments of the check are normally accomplished in a FSTD. In those instances when a check FE candidate is to conduct any portion of a check in an airplane in-flight, the check FE candidate must be a qualified and current FE and must be evaluated during actual flight.

## **F. Conducting a Check Pilot or Check FE Evaluation.**

**1) Preevaluation Briefing.** An inspector conducting a check pilot or check FE evaluation must arrange to meet with the candidate in sufficient time for a preevaluation briefing. The inspector must explain the purpose of the evaluation and some ground rules, including: (1) that the check should be conducted as if the candidate were fully qualified in the role of check pilot or check FE; (2) that during the briefing, the inspector may ask questions of the check pilot or check FE candidate as part of the evaluation; and (3) that the inspector will not ask questions while the check is in progress.

2) Observing and Debriefing the Candidate. While the check is in progress, the inspector will observe, but should not interrupt or otherwise interfere with the check pilot or check FE candidate's management of the check. The inspector must determine that all required events and maneuvers were conducted properly; that the check pilot or check FE candidate's evaluation of the flightcrew member's performance was objective and accurate; and that the check pilot or check FE candidate's debriefing of the flightcrew member was thorough and constructive.

**3-1426 PHASE FIVE—CHECK PILOT AND CHECK FE APPROVAL.** All check pilots and check FEs approved for part 121 or part 135 operations must be approved by the operator's POI.

**A. Letter of Approval.** POIs may only approve check pilots and check FEs for operators under their oversight. Approval of a check pilot or check FE will be in the form of a letter of approval addressed to a responsible official of the operator and signed by the POI, or a representative approved by the POI. This letter of approval may be transmitted to the operator by conventional mail, email, by fax, or by other means acceptable to the operator and the POI. The POI should retain a copy of the letter of approval together with the operator's original letter of nomination for the candidate. The letter of approval must contain the following:

- Identification of the air operator for which the approval is granted,
- Check pilot's or check FE's name and applicable FAA airman's certificate number,
- Approved check pilot or check FE classification,
- Specified category, class, or type of aircraft,
- Authorizations and limitations, and
- Effective date of each approval (since different approvals may occur at different times, this information simplifies record checks. The date on which the check pilot or check FE was recommended for approval by an inspector will be the effective date of approval.) See Figures 3-85, Check Pilot Letter of Approval—Sample A, 3-86, Check Pilot Letter of Approval—Sample B, and 3-87, Check Pilot Letter of Approval for Multiple Operations, for sample letters of approval.

Under current regulations, no normal term of expiration is specified for approvals of check pilots or check FEs (unlike 14 CFR part 183 designees whose authorization must be renewed every 12 months). A check pilot's or check FE's approval, however, may be given, limited, or withdrawn, in the discretion of the POI.

**B. Limitations.** A check pilot or check FE will be approved only in the six classifications listed in this section.

Currently, a separate check airman file in the eVID must be entered into the system for each operator for which the check pilot or check FE holds approval. A forthcoming change to the eVID will result in a single file for each check pilot or check FE, and will permit the listing of all operator affiliations and classifications.

### C. Letter of Approval—Other Copies.

1) The original of the letter of approval will be sent to the operator for which the check pilot or check FE has been approved.

2) A copy of the letter of approval will be retained in POI's files, together with the operator's original letter of request for the candidate. This copy will be maintained in the FAA office files of the overseeing inspector until 2 years after the approval is withdrawn or superseded.

3) When the individual is a training center instructor or Training Center Evaluator (TCE) who is being approved to evaluate an operator's personnel, and if the POI anticipates requesting assistance from the Training Center Program Manager (TCPM) with check pilot or check FE surveillance and oversight, a copy of the letter of approval should be forwarded to that TCPM for inclusion in his or her records.

**D. PTRS and eVID.** The POI must ensure that a record of the approval is entered in the PTRS. A future modification to the PTRS will also require an entry when approval is withdrawn or terminated. Each time an approval is given or withdrawn, the POI must ensure that the operator's eVID file accurately reflects:

1) The current number of active check pilots and check FEs approved for the operator, and

2) The correct status of the individual.

**3-1427 APPROVAL OF INITIAL CADRE CHECK PILOTS AND CHECK FEs.** During the early phases of establishing a check pilot and check FE program, initial cadre check pilots and check FEs are required. Initial cadre check pilot and check FE candidates must first become fully qualified as flightcrew members and then be trained, evaluated, and approved as check pilots and check FEs. Because the regulatory language of parts 121 and 135 does not address a training process for initial cadre check pilots and check FEs, this handbook provides guidance. This process that follows is valuable for startup operations for at least two reasons:

- It is a practical way to initiate and build a check pilot and check FE program; and
- It takes advantage of proving flights, when the operator/applicant is under close FAA scrutiny—with desirable effects on the check pilot and check FE program.

**A. Letter of Request from Operator.** The overseeing inspector must arrange with the operator/applicant to approve one or more likely candidates to form an initial cadre of temporary check pilots and check FEs. The operator/applicant will submit a letter of request, as described earlier in this section. This letter comprises the request for initial cadre check pilots and check FEs and a description of the training that they will undergo.

**B. Letter of Approval.** The POI must approve the candidates using procedures described earlier in this section. Usually initial cadre are approved to function as check pilot—all checks or check FE, so that they may conduct all types of checks and supervise Operating Experience (OE) during the period that the startup operation is beginning. The initial cadre letter

of approval is a temporary approval, to be replaced with a permanent letter of approval after the check pilot or check FE is fully qualified. The initial cadre letter must contain a statement similar to the following:

(Name) is approved as an initial cadre check (pilot or FE) to function as a (check pilot—all checks or check FE) for the purpose of initiating operations with the (type of aircraft) for (name or operator). This approval expires on (expiration date).

**3-1428 TRAINING, CERTIFICATION, AND QUALIFICATION—STARTUP.** The operator must provide a full qualification process for its initial cadre check pilots and check FEs.

**A. Initial Training and Certification.** The operator must first arrange to have initial cadre check pilots and check FEs trained and appropriately certificated for their flightcrew member duty positions. The operator may provide the training by contracting with a manufacturer, with another operator of the same 14 CFR operating part, or with properly qualified individuals. An inspector or an aircrew program designee designated examiner may certificate the initial cadre, provided that the examiner is employed by a U.S. air carrier operator.

**B. Gaining Proficiency as Instructors.** After the initial training and certification, initial cadre check pilots and check FEs must become proficient in the operator's proposed training program by instructing each other, or in the case of a single initial cadre check pilot or check FE, by self-training. During this training, an operator may arrange for a pilot from the manufacturer, from another operator, or from another source to act as the safety pilot or instructor pilot.

**C. Proficiency, Competency, and Flight Checks.** After the first initial cadre check pilots and check FEs have become proficient as instructors, they may then begin the training and checking of other initial cadre check pilots and check FEs in accordance with the operator's initially approved flight training and qualification curriculum segments. Each check must be observed by an FAA inspector who holds the appropriate airman's certificate, and the appropriate type rating, when applicable. If the inspector determines that the performance of an initial cadre check pilot or check FE conducting a certain check is satisfactory, the inspector will recommend to the overseeing inspector that the candidate be approved as an initial cadre check pilot or check FE for that type of check. One initial cadre check pilot or check FE may check another, with the process repeated until each candidate has been approved as an initial cadre check pilot or check FE or has been terminated from the program. If only one person is being considered to be the initial cadre check pilot or check FE, an inspector will observe that person conducting a check of another flightcrew member. If the candidate's performance is satisfactory, the inspector must recommend to the POI that the candidate be removed from temporary status and approved for full-time check pilot or check FE duty with the operator.

**D. OE.**

1) Initial cadre check pilots and check FEs will be permitted to acquire OE flight hours on any flight that can be credited toward the proving-test flight-hour requirement (including training flights, ferry flights, and representative en route proving flights). OE flight hours may be accrued by initial cadre check pilots and check FEs while they are:

- Conducting aircraft checks;
- Overseeing the OE of other flightcrew members,
- Being checked, or
- Acquiring OE under the supervision of other initial cadre check pilots or check FEs.

2) Initial cadre check pilots must receive a line check and conduct a line check during an en route proving flight or a ferry flight. The same process (above) will apply: one initial cadre check pilot line checks another while being observed by an FAA inspector. If the check pilot's performance is satisfactory, the inspector may recommend that the person be removed from temporary status and approved for full-time duty as a check pilot for the operator. If there is only one initial cadre check pilot, then the FAA inspector will conduct the line check.

**3-1429 APPROVAL OF A CHECK PILOT OR CHECK FE IN MULTIPLE AIRCRAFT.**

Before a candidate may be approved as a check pilot or check FE in more than one type of aircraft, the operator must show that there is a need. The candidate must be fully qualified and current in each of the aircraft types. Overseeing inspectors must be judicious in approving check pilots and check FEs and vigilant in overseeing their performance. There are various acceptable combinations of check pilot and check FE approvals.

**A. All Single-Engine, Normal, or Commuter Category Airplanes.** A check pilot may be approved to serve in all single-engine, normal, or commuter category airplanes that an operator operates under part 135.

**B. Helicopters.** A check pilot may be approved to serve in two different types of helicopters.

**C. More Than One Aircraft Family.** For part 135 operations, a check pilot may be approved to serve in a combination of two of the following aircraft families:

- One series of multiengine, normal, or commuter category airplanes;
- Single-engine, normal, or commuter category airplanes; or
- Helicopters.

**D. More Than One Commuter or Transport Category Aircraft Type.** Before a candidate may be approved as a check pilot or check FE in two commuter category aircraft types or two transport category types, the overseeing inspectors must ensure that the following conditions are met:

- For proficiency check pilot—aircraft or simulator the candidate must have logged at least 500 hours as PIC in each type;
- For line check pilot the candidate must have logged at least 100 hours as PIC in each type and at least 1,000 hours as PIC in transport- or commuter-category airplanes; and
- For check FE the candidate must have logged at least 500 hours as a FE in each type.

### **3-1430 APPROVAL OF A CHECK PILOT OR CHECK FE FOR MULTIPLE**

**OPERATORS.** This paragraph provides a standard method for approving a check pilot or check FE to serve multiple operators. The approval of a check pilot or check FE to serve more than one operator is limited to those cases in which the operator's aircraft, aircraft operating manuals, procedures, and checklists are compatible in the judgment of the overseeing inspector(s).

Provision for multiple check pilot or check FE approvals may be made for part 135 single-pilot operators, part 135 single-PIC operators, and for part 121 and part 135 operators with programs that are compatible, in the judgment of the respective operator's POI. An operator's POI may also approve a check pilot or check FE to serve multiple part 121 or part 135 operators on a temporary basis, when a startup operation is initiated or when new equipment is being introduced. Other multiple approvals may be made with the concurrence of the regional Flight Standards division (RFSD) when justified.

### **3-1431 TRAINING CENTER INSTRUCTORS/EVALUATORS APPROVED BY AN AIR CARRIER'S POI AS CONTRACT CHECK PILOTS OR CHECK FEs.**

Training centers have made FSTD training and checking available to a broad range of aviation users, including air carriers with smaller fleets and smaller aircraft. With the approval of an operator's POI, an employee of a 14 CFR part 142 training center may serve one or more air operators as a contract check pilot or check FE. The guidance contained in this paragraph applies to training center personnel who have been requested to serve as such contract check pilots or check FEs.

**A. POI Approves the Check Pilot or Check FE Candidate.** Only the POI may approve a check pilot or check FE for use in an air carrier's training program. Normal procedures apply, including a letter of request from the operator, and a letter of approval from the operator's POI.

**B. TCPM Role.** Without diminishing the responsibility or authority of the POI, experience has shown that the TCPM may be in the best position to make quality assessments at training centers on behalf of the Administrator. The TCPM continually assesses training programs conducted by a training center for certification of airmen under 14 CFR parts 61 and 63. Similarly, the TCPM assesses the instructors and TCEs employed by a training center. At the request of an operator's POI, a center's TCPM may therefore assist with the evaluation of an air carrier's request to use the services of a center's employee as a contract check pilot or check FE.

**C. Scheduling Multiple-Use Check Pilots and Check FEs and Maintaining Check Pilot or Check FE Status.** Before a multiple approval is made, the overseeing inspector must ensure that the operators understand that the scheduling and use of the check pilot or check FE is their responsibility. An operator entering into a multiple-use arrangement may employ a

check pilot or check FE on a part-time basis, may contract with another operator or training center to provide a check pilot or check FE, or may contract directly with the check pilot or check FE.

Each operator is responsible for ensuring that the check pilot or check FE maintains currency as specified in their operations specifications paragraph A031, the appropriate operating rule and Volume 3, Chapter 20, Section 1, and that he or she performs adequately when serving the operator.

**D. Issuing Additional Letters of Approval.** An operator seeking check pilot or check FE approval for an individual who is serving as a check pilot or check FE for another operator must provide the necessary information to its POI. The operator's POI must consider the means the operator will use to train, to qualify, and to maintain qualification of the contract check pilot or check FE candidate and the documentation that will be required. Contract check pilots and check FEs may be able to meet recurrent training requirements for more than one operator simultaneously. When the operator and the POI have agreed on the training and qualification necessary for the contract check pilot or check FE, the operator must submit a written letter of request to the POI, as described earlier in this section. When the second or subsequent POI approves the individual as a contract check pilot or check FE for his/her operator, that POI will issue an additional letter of approval following the procedures described above. Additionally, if the subject check pilot or check FE is an employee of a part 142 training center, the POI will forward a copy of the new approval letter to the center's TCPM.

The check airman file in the eVID is being modified to allow for a single file for each individual who has been approved as a check pilot or check FE for an operator. This consolidated check airman eVID file will be linked to a unique airman identifying number, and will permit multiple entries for aircraft and operator combinations.

**E. Primary Oversight Responsibility.** Each operator for which an individual is approved as check pilot or check FE, along with the operator's POI, has responsibility for oversight of the contract check pilot or check FE. When the check pilot or check FE is employed by a training center, the FAA TCPM may provide assistance as requested by the POI with this responsibility. Any POI who has issued a letter of approval to the check pilot or check FE may, however, conduct surveillance activities at anytime.

**F. Contract Check Pilot or Check FE LOAs.** When approved as a contract check pilot or check FE for an operator, the POI of that operator will issue a letter of approval showing the operator; the check pilot or check FE classification; the type(s) of aircraft authorized, and the type(s) of checks authorized (by regulatory reference). A sample contract check pilot letter of approval is provided on the FAA's Air Transportation Division—Air Carrier Training and 142 Training Center Branch Web site at [http://www.faa.gov/pilots/training/part\\_142/media/check\\_pilot\\_loa.doc](http://www.faa.gov/pilots/training/part_142/media/check_pilot_loa.doc). This sample letter provides for the listing of multiple contract check pilot approvals for a particular operator on a single letter.

**G. Recordkeeping.** Each operator is required by their operating rules to maintain training and qualification records for his/her check pilots and check FEs. This responsibility cannot be delegated. However, by agreement between the operator and the training center, a training center may keep a contract check pilot's or check FE's training and qualification records. This agreement must be documented in each operator's recordkeeping system and approved by the POI. The POI must maintain a record in the operator's file that documents the details of any such arrangement, including the location in the operator's manual where such arrangement is described.

**3-1432 FLIGHTCREW MEMBER FAILURE RATES.** The repetitive failure of a single flightcrew member, or the failure of several flightcrew members during proficiency, competency, or flight checks, may indicate a training program deficiency. Overseeing inspectors must establish procedures with their certificate holders that provide for FAA notification when unsatisfactory performance occurs. Identified deficiencies should be promptly investigated and corrective action taken. A comparison of failure rates between checks conducted by inspectors and those conducted by check pilots and check FEs should also be made. If a significant difference in failure rates exists, additional observations and counseling should be conducted. The overseeing inspector must discuss the matter with the appropriate official responsible for the certificate holder's training and checking activities. Should these discussions not lead to an improvement in the quality of training and evaluations, consideration should be given to withdrawing approval of any check pilot or check FE involved, or if appropriate, withdrawing approval for a specific part or for the entire training program.

**3-1433 SURVEILLANCE OF CHECK PILOTS AND CHECK FEs.** Overseeing inspectors must establish a surveillance program for each check pilot and check FE at the time of approval. The POI must determine which geographic surveillance unit will have responsibility for the check pilot or check FE's surveillance program and notify that geographic unit of the check pilot or check FE's approval. Notification may be accomplished by the POI sending a copy of the letter of approval to the geographic unit.

**A. Biennial Check Pilot or Check FE Observation.** The surveillance program for each office must include an observation by an FAA inspector or aircrew program designee of each approved check pilot and check FE in his or her area of responsibility at least once every 24 months. Check pilot and check FE observations should be conducted while the check pilot or check FE is conducting an approved checking activity or supervising OE. For example, a check pilot approved to conduct proficiency checks, line checks, and supervision of OE, should be observed conducting a proficiency check in the aircraft or FSTD, conducting a line check, or supervising OE. At the discretion of the POI, an observation conducted by another POI or by a TCPM for a check under the same rule part need not be repeated. It is the responsibility of the operator to maintain records showing that this observation has been completed.

**1) Surveillance of Check Pilots and Check FEs by Geographic Units.** POIs will monitor the activity of geographic units conducting check pilot and check FE surveillance on their behalf. When significant events are reported, the POI should provide feedback to the operator. POIs should remain especially vigilant for repetitive failure rates as discussed in paragraph 3-1432 of this section as an indicator of training program deficiency.

2) **Constraints of Aircraft with Two Pilot Seats.** Inspectors may encounter difficulties in conducting the surveillance of check pilots whose activities are restricted to two-place airplanes or helicopters. In such cases, it may not be possible for an inspector to observe the check pilot conducting actual checks. In lieu of these observations, the POI may review the check pilot's activities and arrange for an inspector to administer the check pilot's competency and line checks.

**B. Periodic Report by the Operator.** The POI should arrange to have the operator provide the POI with a periodic report of each check pilot's and check FE's activities, including a pass/fail rate, to coincide with the POI's periodic review (annual, semiannual, or other). POIs may arrange for these reports to arrive at a time that meets the POI's needs. A check pilot or check FE should be active enough to retain the required knowledge and skills. This activity level may vary depending on the check pilot or check FE function, the size of the operator, and the number of approved check pilots and check FEs. Usually a check pilot or check FE should conduct at least eight authorized check pilot or check FE activities during a 12-month period (including supervision of OE). The POI should specifically re-assess the operator's need for those check pilots and check FEs whose records indicate low activity levels.

**C. Withdrawing Check Pilot or Check FE Approval.** The POI's reasons for withdrawing the approval of a check pilot or check FE may include a lack of check pilot or check FE activity, a request by the operator, or an unsatisfactory performance on the part of the check pilot or check FE. To withdraw approval of a check pilot or check FE, the POI must notify the operator by letter that approval is withdrawn. The letter should include the name of the check pilot or check FE, the effective date of withdrawal, and the reason approval is being withdrawn. If the approval of a check pilot or check FE is withdrawn because of unsatisfactory performance, the letter of withdrawal must be sent to the operator by certified mail—return receipt requested. A future additional PTRS activity code will be used to capture data associated with withdrawal or termination of a check pilot's or check FE's approval.

Under current regulations, no normal term of expiration is specified for approvals of check pilots and check FEs (unlike designated examiners, whose term is 12 months, per 14 CFR part 183). Contract check pilots and check FEs who are employees of a part 142 training center will have their term contingent upon continued employment with the training center and maintaining their instructor or evaluator qualification with the employing center.

**D. POI Authority.** A check pilot's or check FE's approval may be given, limited, withdrawn, or terminated at the discretion of the POI.

**Figure 3-85. Check Pilot Letter of Approval—Sample A**

February 24, 2006

Mr. Sam A. Frost  
 Chief Pilot  
 Transcon Express, Inc.  
 48 Perimeter Rd.  
 Utica, OH 22032

Dear Mr. Frost:

John R. Smith, FAA certificate number 467120928, is approved as a check pilot. This check pilot is approved to conduct checks in the Douglas DC-9 aircraft for employees of Transcon Express, Inc. This approval is applicable for the following checking functions:

|                                     |                                       |                             |
|-------------------------------------|---------------------------------------|-----------------------------|
| <input type="checkbox"/>            | Proficiency Check Pilot—Aircraft      | Effective _____             |
| <input checked="" type="checkbox"/> | Proficiency Check Pilot—Simulator     | Effective <u>8/27/2009</u>  |
| <input type="checkbox"/>            | Line Check Pilot—All Seats            | Effective _____             |
| <input checked="" type="checkbox"/> | Line Check Pilot—Observer's Seat Only | Effective <u>02/20/2009</u> |
| <input type="checkbox"/>            | Check Pilot—All Checks                | Effective _____             |

Please retain a copy of this letter in Mr. Smith's individual flight training records.

Sincerely,  
 James J. Jones  
 Principal Operations Inspector  
 FSDO (XXXX)

**Figure 3-86. Check Pilot Letter of Approval—Sample B**

February 24, 2007

Mr. Sam A. Frost  
 Chief Pilot  
 Trans Regional Airlines, Inc.  
 48 Perimeter Rd.  
 Utica, OH 22032

Dear Mr. Frost:

John R. Brown, FAA certificate number 467219028, is approved as a check pilot. Mr. Brown is approved to conduct checks in multiengine Cessna, reciprocating-series airplanes and in all single-engine airplanes to pilots that are employed by Trans Regional Airlines, Inc. This approval is applicable for the following checking functions:

|                                     |                                       |                             |
|-------------------------------------|---------------------------------------|-----------------------------|
| <input type="checkbox"/>            | Proficiency Check Pilot—Aircraft      | Effective _____             |
| <input type="checkbox"/>            | Proficiency Check Pilot—Simulator     | Effective _____             |
| <input type="checkbox"/>            | Line Check Pilot—All Seats            | Effective _____             |
| <input type="checkbox"/>            | Line Check Pilot—Observer's Seat Only | Effective _____             |
| <input checked="" type="checkbox"/> | Check Pilot—All Checks                | Effective <u>02/24/2009</u> |

Please retain a copy of this letter in Mr. Brown's individual flight training records.

Sincerely,  
 James J. Jones  
 Principal Operations Inspector  
 FSDO (XXXX)

### Figure 3-87. Check Pilot Letter of Approval for Multiple Operators

February 24, 2007

Mr. Sam A. Frost  
 Chief Pilot  
 Trans Regional Airlines, Inc.  
 48 Perimeter Road  
 Utica, OH 22032

Dear Mr. Frost:

John R. Brown, FAA certificate number 467219028, is approved as a check pilot. Mr. Brown is approved to conduct checks in multiengine Cessna, reciprocating series airplanes and all single engine airplanes to pilots that are employed by:

Trans Regional Airlines, Inc., Effective 02/24/2009, and Transylvania Charter Services, Effective 11/15/2009.

This approval is applicable for the following designated functions:

|                                     |                                       |                             |
|-------------------------------------|---------------------------------------|-----------------------------|
| <input checked="" type="checkbox"/> | Proficiency Check Pilot—Aircraft      | Effective <u>MM/DD/YYYY</u> |
| <input type="checkbox"/>            | Proficiency Check Pilot—Simulator     | Effective _____             |
| <input checked="" type="checkbox"/> | Line Check Pilot—All Seats            | Effective <u>MM/DD/YYYY</u> |
| <input type="checkbox"/>            | Line Check Pilot—Observer's Seat Only | Effective _____             |
| <input checked="" type="checkbox"/> | Check Pilot—All Checks                | Effective <u>MM/DD/YYYY</u> |

Please retain a copy of this letter in Mr. Brown's individual flight training records.

Sincerely,  
 James J. Jones  
 Principal Operations Inspector  
 FSDO (XXXX)

### **Figure 3-88. Check Pilot and Check FE Approval Job Aid**

#### **1. Operator's Letter Contains Necessary Information:**

- Full name of candidate
- Business address of candidate
- Flightcrew member duty position and aircraft type
- Type of check pilot or check FE designation requested

#### **2. Certificates (copies)**

- Applicable airman
- Medical
- Any valid check pilot or check FE Letters of Approval

#### **3. Training Records (copies)**

- Initial, transition, or upgrade to requested aircraft and flightcrew member duty position
- Recurrent
- Check pilot or check FE

#### **4. Resume of experience included**

#### **5. FSIS verification satisfactory**

#### **6. Check pilot or check FE evaluation scheduled**

#### **7. Report of evaluation received from PTRS**

#### **8. Open eVID file**

#### **Favorable Report:**

#### **9. Prepare Letter of Approval**

- Original letter to operator
- Copy to geographic unit supervisor
- Copy to operator file
- Copy to other POI (if check pilot or check FE for another operator)

#### **10. Update operator eVID file**

#### **11. Complete PTRS**

#### **Unfavorable Report:**

#### **12. Prepare letter to operator indicating disapproval**

#### **13. Update operator eVID file**

#### **14. Complete PTRS**

**RESERVED.** Paragraphs 3-1434 through 3-1448.

**VOLUME 3 GENERAL TECHNICAL ADMINISTRATION****CHAPTER 20 CHECK AIRMAN, INSTRUCTOR, AND SUPERVISOR PROGRAMS  
FOR TITLE 14 CFR PART 121 AND 135 CERTIFICATE HOLDERS****Section 4 Check Pilot, Check Flight Engineer, and Air Transportation Flight Instructor  
Training**

**3-1434 GENERAL.** This section provides guidance concerning the training requirements for check pilots, check Flight Engineers (FE), and air transportation flight instructors.

**A. Candidates: Selection of Instructors, and Nomination of Check Pilots and Check FEs.** The operator selects instructors and submits the selections for review by the principal operations inspector (POI). The operator nominates check pilots and check FEs and submits the nominees for approval by the POI. Because the experience levels of pilots and FEs vary among operators, it is impractical to specify minimum experience levels for candidates. In some cases, such as cases involving new operators, candidates may have relatively little flight experience. Regardless of experience levels, candidates must demonstrate high levels of knowledge and skill in the applicable job functions. POIs must ensure that adequate training for check pilots, check FEs, and air transportation flight instructors is completed and documented in the applicable records.

**B. Single Pilot-In-Command (PIC) Operators.** Operators using aircraft with a single PIC present questions about training that is not addressed in regulations. For such operators, a check pilot who performs competency and line checks may qualify and maintain currency by one of three methods:

- 1) The check pilot may receive competency and line checks from a check pilot from another operator or a training center approved by the operator's POI to conduct the air carrier's training;
- 2) If a Level B, C, or D full flight simulator (FFS) that replicates the aircraft being used is available and is approved for use in that operator's training program, the check pilot may receive competency checks in that FFS from a check pilot from another operator or training center approved by the operator's POI; or
- 3) The check pilot may receive competency and line checks from a Federal Aviation Administration (FAA) inspector.

**3-1435 TRAINING FOR FLIGHT INSTRUCTORS, CHECK PILOTS, AND CHECK FE.** To ensure that its flight instructors are adequately trained, each operator's approved initial and transition flight instructor training program must include the training specified in Title 14 of the Code of Federal Regulations (14 CFR) part 121, §§ 121.412, 121.414, and part 121 appendix H; or 14 CFR part 135, §§ 135.338 and 135.340, as applicable. To ensure that its check pilots and check FEs are adequately trained, each operator's approved initial and transition check pilot and check FE training program must include the training specified in part 121, §§ 121.411, 121.413, and part 121 appendix H; or 14 CFR part 135, §§ 135.337 and 135.339, as applicable. Check pilots, check FEs, and air transportation flight instructor

candidates must satisfactorily complete the operator's approved initial, transition, or upgrade training programs for the desired aircraft and flightcrew member duty position. In addition, instructors must complete the operator's instructor training, and check pilots and check FEs must complete the operator's instructor and check pilot or check FE training. If a flight instructor, check pilot, or check FE has satisfactorily completed a curriculum segment in previous training that applies to more than one flightcrew member duty position or aircraft, it is not necessary to repeat that segment.

#### **A. Ground Training.**

1) Ground training for air transportation pilot flight instructors (including flight instructors using flight simulation training devices (FSTDs)), proficiency check pilots (including check pilots using FSTDs), and line check pilots must include the following topics:

- Fundamental principles of the teaching–learning process,
- Teaching methods and procedures, and
- Instructor–student relationships.

2) Sections 121.414(c)(7) and § 135.340(c)(7) provide that the aforementioned topics need not be included when the candidate holds a flight instructor certificate issued by the FAA. These regulations do not relieve the operator of the responsibility for ensuring that instructors, check pilots, and check FEs remain proficient in these areas:

- a) Regulatory and administrative functions of instructors, check pilots, and check FEs, as appropriate;
- b) Applicable regulations;
- c) The operator's policies and procedures;
- d) Methods, procedures, and techniques for conducting required checks;
- e) Seat-dependent tasks for the specific aircraft;
- f) Analysis of flightcrew member performance, including identification of improper or insufficient training;
- g) Crew resource management concepts and vocabulary;
- h) Appropriate corrective actions for unsatisfactory performance in training or evaluation;
- i) Guidelines and safety measures for emergency situations likely to develop in conducting the required normal, abnormal, and emergency procedures in an aircraft and in a FSTD, as appropriate; and
- j) The consequences of improper or untimely safety measures.

**B. Flight Training.** Flight training for flight instructors—aircraft, proficiency check pilots—aircraft, and line check pilots must include the following:

1) Enough flight training and practice in conducting training (and checks for check pilots) from the left and right pilot seats using the required normal, abnormal, and emergency procedures to ensure the individual's competency in conducting the required flight training (and pilot checks if applicable). For an air transportation flight instructor—aircraft and proficiency check pilot—aircraft, training, and practice in the takeoff and landing events of the operator's approved training program must be conducted in an aircraft; the remainder of the training may be conducted in a FFS.

2) For proficiency check pilot/line check pilot—aircraft, training in-flight in an aircraft supervising normal takeoffs and landings from either pilot seat. The operator must ensure that the check pilot candidate is thoroughly trained in second-in-command (SIC) functions and capable of accomplishing them competently, while supervising and evaluating a new PIC.

3) Guidelines and safety measures for emergency situations likely to develop in conducting the required normal, abnormal, and emergency procedures in an aircraft.

4) The consequences of improper or untimely safety measures.

**C. Flight Training – Flight Instructor, Check Pilot, and Check FE Who Conduct Training or Checking in a FSTD.** Flight training for any flight instructor, check pilot, or check FE who conducts training or checking in a FSTD must include:

1) Training and practice in conducting instruction and/or checks in the required normal, abnormal, and emergency procedures to ensure competence to conduct the flight instruction and/or checks required by part 121 or 135, as applicable. This training and practice must be accomplished in a FSTD.

2) Training in the operation of each kind of FSTD to be used to ensure competence to conduct the flight instruction and/or checks required by part 121 or 135, as applicable.

**D. Flight Training—FE Flight Instructors.** Flight training must include the following:

1) Enough flight training and practice to ensure the instructor's competency. Normal, abnormal, and emergency procedures must be covered. For a FE flight instructor, flight training may be completed entirely in a FSTD.

2) Guidelines and safety measures for emergency situations likely to develop in conducting the required normal, abnormal, and emergency procedures in an aircraft and in a FSTD, as appropriate.

3) Consequences of improper or untimely safety measures.

**E. Credit for Check Pilot or Check FE Training—Multiple Operators.**

1) A POI may approve a check pilot or check FE to serve more than one operator. The POI can determine whether equivalent training completed with one operator may be credited toward the check pilot or check FE training requirement for another operator. Creditable training may include parts of ground training and flight training. For example, a check pilot or check FE might be eligible for training credit under the following conditions:

- Employed as a training center evaluator by a training center;
- Regularly performing proficiency or competency checks; and
- Using the same procedures for all operators.

2) When procedures, aircraft, or types of operations differ, the POI must require that the check pilot or check FE candidate (for service with an additional operator) complete appropriate additional training. Appropriate additional training must address differences, and may comprise entire curriculum segments.

**RESERVED.** Paragraphs 3-1478 through 3-1495.

**VOLUME 3 GENERAL TECHNICAL ADMINISTRATION****CHAPTER 22 AIRCRAFT DISPATCHER TRAINING AND QUALIFICATION PROGRAMS****Section 4 Aircraft Dispatcher Initial Equipment and Transition Ground Training Curriculum Segments**

**3-1681 GENERAL.** This section contains direction and guidance to be used by principal operations inspectors (POI) when evaluating the content of aircraft dispatcher initial equipment and transition ground training curriculum segments. Title 14 of the Code of Federal Regulations (14 CFR) part 121, § 121.422 requires that initial and transition aircraft dispatcher ground training curriculum segments include instruction in at least the following: general dispatch subjects, aircraft characteristics, operations procedures, and emergency procedures.

**A. General Dispatch Subjects.** General dispatch subject areas must include the following:

- International weather reports (if applicable);
- Communications must include the characteristics of the systems to be used and the appropriate normal and emergency procedures to be used; and
- Meteorology must include the various types of meteorological information (METI) and forecasts and interpretation of weather, including the forecasting of en route and terminal temperatures and other weather conditions; frontal systems; wind conditions; the use of actual and prognostic weather charts; and, when jet aircraft are involved, the inclusion of upper-air reports and forecasts, including turbulence.

**B. Weather Interpretation and Adverse Conditions.** Weather interpretation and adverse conditions must be strongly emphasized in initial training, including at least the following:

- Adverse weather phenomena must include clear air turbulence, wind shear, thunderstorms, icing, and volcanic ash;
- Notice to Airmen (NOTAM);
- Navigational charts and publications;
- Joint dispatcher-pilot responsibilities;
- Air traffic control (ATC) coordination procedures;
- Familiarization with operational area; and
- Characteristics of special airports and other operationally significant airports which the operator uses. These characteristics may include terrain, approach aids, or prevailing weather phenomena.

The airports covered should include the airports in the area for which the aircraft dispatcher will be responsible for after becoming qualified. The operator's emphasis should be on airports that create special problems for aircraft dispatchers in the operator's area of operations.

**C. Aircraft Characteristics.** The operator should provide both general training and aircraft-specific training when the aircraft dispatcher student is to be qualified on more than one type of aircraft. Training must be conducted on the general operating characteristics of the aircraft groups that the operator uses, such as turbojet or reciprocating aircraft. A description of each aircraft the aircraft dispatcher will be authorized to release is also required. This training must be directly related to aircraft dispatcher duties. The operator's training program should emphasize the following: aircraft operating and performance characteristics, navigation equipment, instrument approach and communications equipment, and emergency equipment. The operator must also provide training on the content and use of those portions of the flight manual (fm) applicable to aircraft dispatcher duties, such as minimum equipment lists (MEL), and abnormal and emergency procedures.

1) Aircraft training must be tailored to aircraft dispatcher duties. It is not necessary for this training to contain the same degree of detail and emphasis on aircraft systems as exists in flightcrew training. POIs shall ensure that aircraft training is not conducted to the exclusion of other required training. For example, aircraft dispatchers should be taught that jet transport aircraft are equipped with constant speed drive (CSD) units; that CSDs are necessary for the proper functioning of the engine-driven generator; and that when a CSD is inoperative, the associated generator is also inoperative. Equipped with this knowledge, the aircraft dispatcher should be able to determine the correct action for an inoperative CSD by referring to the MEL. Aircraft dispatchers are not required to have detailed training on aircraft systems to comprehend this information.

2) Operators may choose to conduct initial equipment training on one type of aircraft or to include all aircraft the operator operates in an initial new-hire curriculum. When the operator chooses to limit initial new-hire aircraft training to one specific type of aircraft, the aircraft dispatcher must be qualified on additional types of aircraft by means of transition training.

3) Section 121.418(a) requires that operators conduct differences training when the air carrier has airplane variances within the same type of airplane. This training should focus on the differences which affect aircraft dispatcher duties, such as operating characteristics, performance limitations, and MELs.

**D. Operations Procedures.** Operators must provide training in the specific operations the aircraft dispatcher must perform and training relative to each type of aircraft the aircraft dispatcher is authorized to release. Operators must provide aircraft dispatchers with specific training in the following procedures:

- Operations under adverse weather phenomena conditions must include clear air turbulence, wind shear, thunderstorms, icing, and volcanic ash;
- Weight and balance (W&B) computations and load control procedures;
- Aircraft performance computations, to include takeoff weight limitations based on departure runway, arrival runway, contaminated runways, en route limitations, and also engine-out limitations;
- Flight-planning procedures, to include route selection, flight time, and fuel requirements analysis;

- Dispatch release preparation;
- Crew briefings;
- Flight monitoring procedures;
- Flightcrew response to various emergency situations, including the assistance the aircraft dispatcher can provide in each situation;
- MEL and Configuration Deviation List (CDL) procedures;
- Manual performance of all required procedures in case of the loss of automated capabilities;
- Training in appropriate geographic areas;
- ATC and instrument procedures, to include ground hold and central flow control procedures; and
- Radio/telephone procedures.

**E. Emergency Procedures.** Operators must provide training to aircraft dispatchers in the procedures the dispatcher is to follow in case of an emergency. This training must cover actions taken to aid the flightcrew and to notify the company, government, and private agencies.

**3-1682 AREAS OF EMPHASIS.** Operators should emphasize specific areas for each category of training in the aircraft dispatcher ground training curriculum segment.

**A. Initial New-Hire Training.** Operators must provide thorough training in each subject area in the initial new-hire category of training. The operator must ensure that each aircraft dispatcher student has mastered each skill required to perform adequately on the job. In addition to the academic or classroom training, aircraft dispatchers are usually required to complete on-the-job training (OJT) to become proficient in the required aircraft dispatcher skills. Although 14 CFR does not require OJT, it is an effective method the operator can use to develop a new-hire aircraft dispatcher's skills in the finer points of aircraft dispatcher duties and responsibilities. Furthermore, it is one of the best training methods for qualifying aircraft dispatchers to the standard of performance required on competency checks.

**B. Initial Equipment Training.** Operators must conduct initial equipment training when a currently qualified aircraft dispatcher is qualifying to dispatch an aircraft of a different group, such as turbojet, turbopropeller, or reciprocating aircraft. The operator should emphasize two areas in this training: the operating characteristics of the new aircraft and the new considerations an aircraft dispatcher should make as a result of the new aircraft. For example, when aircraft dispatchers are first learning to dispatch turbojet aircraft, training will be required in high altitude meteorology, clear air turbulence awareness, the tropopause, and jet streams.

**C. Transition Training.** Operators must conduct transition training to qualify an aircraft dispatcher in a new type of aircraft of the same group. The aircraft dispatcher must be fully qualified as a dispatcher on an aircraft of the same group to be eligible for training in the transition category. Since qualified dispatchers may be assumed to possess a general familiarity with the characteristics of airplanes of the same group, the ground training curriculum segment consists almost exclusively of aircraft specific training on the new aircraft.

### **3-1683 EVALUATION OF TRAINING HOURS.**

#### **A. Initial New-Hire and Initial Equipment Ground Training Hours.**

Section 121.422(c) specifies the following minimum programmed hours of instruction required for the aircraft dispatcher initial new-hire and initial equipment ground training curriculum segments are as follows:

- Group I reciprocating airplanes—30 hours;
- Group I turbopropeller airplanes—40 hours; and
- Group II turbojet airplanes—40 hours.

**B. Transition Training Hours.** Programmed hours for transition training are not specified in 14 CFR. The number of hours required for transition training varies widely depending on the similarity of the aircraft types involved and the experience of the aircraft dispatcher. With similar aircraft types, transition training may not have to be extensive. When differences between aircraft types are great, more extensive training is required.

**C. Determining General Ground Training Hours.** POIs must consider the complexity of both the operation and the aircraft when evaluating an operator's general ground training curriculum outline. Training for a complex type of operation may require more than the 40-hour minimum regulatory requirement. The proposed programmed hours should initially be at least the 40 hours specified in § 121.422. Normally, the required training can only be accomplished in the minimum 40 hours specified by regulation for simple operations with one or two types of aircraft. When complex operations and several different airplane types are involved, more hours are usually required. The actual required training hours can only be determined in the final approval process by the inspector's observation and assessment of the training effectiveness. Reductions to the programmed hours are appropriate when the operator demonstrates that the training provided is sufficient.

**D. Reduction in Programmed Hours Request.** Should an operator request a reduction in programmed hours for the Group I or Group II dispatcher initial new-hire and initial equipment ground training curriculum, the POI should not approve the request unless it includes a minimum of 32 programmed hours. This minimum should be maintained whether the reduction is based upon the operator's complexity and aircraft, or upon the provisions specified in § 121.405(d). No reduction below 32 hours should be approved prior to coordination with the Air Transportation Division (AFS-200).

### **3-1684 EVALUATION OF AN AIRCRAFT DISPATCHER GENERAL GROUND TRAINING CURRICULUM SEGMENT OUTLINE FOR INITIAL APPROVAL.**

POIs must determine whether an operator's proposed general ground training modules contain the information and training on skills required for aircraft dispatchers to become fully proficient in aircraft dispatcher duties and responsibilities. Inspectors should use the job aid in this section when evaluating the operator's proposed curriculum segment outline, see Table 3-92, Aircraft Dispatcher Ground Training Segment Job Aid.

**A. Aircraft Dispatcher Ground Training Segment Job Aid.** This job aid (Table 3-92) provided for guidance only, and must not be construed to be an outline of mandatory rules or

regulatory requirements. The job aid is intended to assist inspectors during the evaluation of individual aircraft dispatcher ground training curriculum segment modules for both initial and final approval.

**B. Use of Job Aid.** When using the job aid, inspectors should make a side-by-side comparison of the operator's proposal. The job aid is organized with training subjects listed in the left column and evaluation criteria or remarks listed across the top. Inspectors may use the spaces within the matrix for notes, comments, dates, or checkmarks. There are also blank columns and rows in each job aid for inspectors to indicate additional training modules or evaluation criteria.

**Table 3-92. Aircraft Dispatcher Ground Training Segment Job Aid**

| TRAINING SUBJECTS                              | EVALUATION CRITERIA        |                        |                              |  |  |
|--|----------------------------|------------------------|------------------------------|--|--|
|  | Adequacy of Element/Events | Adequacy of Courseware | Training Aids and Facilities |  |  |
| GENERAL DISPATCH<br>Communications             |                            |                        |                              |  |  |
| Meteorology<br>Reports & Forecast              |                            |                        |                              |  |  |
| Weather Interpret.<br>Winds and<br>Temperature |                            |                        |                              |  |  |
| Terminal & Frontal<br>Weather                  |                            |                        |                              |  |  |
| International<br>Weather                       |                            |                        |                              |  |  |
| Upper Air Reports<br>and Prog. Charts          |                            |                        |                              |  |  |
| Adverse Weather                                |                            |                        |                              |  |  |
| Notice to Airmen<br>(NOTAM) System             |                            |                        |                              |  |  |
| Navigational<br>Publications                   |                            |                        |                              |  |  |
| Flight Planning                                |                            |                        |                              |  |  |
| Organized Track<br>Systems and<br>Procedures   |                            |                        |                              |  |  |
| Joint<br>Dispatcher-Pilot<br>Responsibility    |                            |                        |                              |  |  |

| TRAINING SUBJECTS                                       | EVALUATION CRITERIA        |                        |                              |  |  |
|---|----------------------------|------------------------|------------------------------|--|--|
|   | Adequacy of Element/Events | Adequacy of Courseware | Training Aids and Facilities |  |  |
| Dispatch Release Preparation                            |                            |                        |                              |  |  |
| Forecasting Terminal Temperatures                       |                            |                        |                              |  |  |
| Radio Telephone Procedures                              |                            |                        |                              |  |  |
| Geographic Area   |                            |                        |                              |  |  |
| Manual Flight Planning                                  |                            |                        |                              |  |  |
| Pilot-in-Command (PIC) Briefing                         |                            |                        |                              |  |  |
| Flight-Following  |                            |                        |                              |  |  |
| Airports, Terrain Aids, Approaches                      |                            |                        |                              |  |  |
| Prevailing Weather Phenomena                            |                            |                        |                              |  |  |
| <b>AIRCRAFT</b>   |                            |                        |                              |  |  |
| General Characteristics                                 |                            |                        |                              |  |  |
| Description of Each Type                                |                            |                        |                              |  |  |
| Operating & Performance Characteristics                 |                            |                        |                              |  |  |
| Navigation and Communication Equipment and Capabilities |                            |                        |                              |  |  |
| Emergency Equipment                                     |                            |                        |                              |  |  |
| Use of Flight Manual (fm)                               |                            |                        |                              |  |  |
| Differences   |                            |                        |                              |  |  |
| <b>PROCEDURES</b>                                       |                            |                        |                              |  |  |

| TRAINING SUBJECTS   | EVALUATION CRITERIA        |                        |                              |  |  |
|---|----------------------------|------------------------|------------------------------|--|--|
|   | Adequacy of Element/Events | Adequacy of Courseware | Training Aids and Facilities |  |  |
| Weight & Balance (W&B)  |                            |                        |                              |  |  |
| Takeoff Performance Limits and Calculations                         |                            |                        |                              |  |  |
| En Route Performance Limits and Calculations                        |                            |                        |                              |  |  |
| Destination Limits and Calculations                                 |                            |                        |                              |  |  |
| Flight Planning Tracks, Fuel, Alternates                            |                            |                        |                              |  |  |
| Minimum Equipment List (MEL) and Configuration Deviation List (CDL) |                            |                        |                              |  |  |
| Air traffic control (ATC) and Flow Control                          |                            |                        |                              |  |  |
| Release Preparation   |                            |                        |                              |  |  |
| Flight Monitoring   |                            |                        |                              |  |  |
| Redispatch In Flight  |                            |                        |                              |  |  |
| Emergency Procedures and Notification                               |                            |                        |                              |  |  |
| Special Airports  |                            |                        |                              |  |  |
|   |                            |                        |                              |  |  |
|   |                            |                        |                              |  |  |
|   |                            |                        |                              |  |  |

**RESERVED.** Paragraphs 3-1685 through 3-1700.

**VOLUME 3 GENERAL TECHNICAL ADMINISTRATION****CHAPTER 22 AIRCRAFT DISPATCHER TRAINING AND QUALIFICATION PROGRAMS****Section 5 Aircraft Dispatcher Qualification Curriculum Segments and Recurrent and Requalification Curriculums**

**3-1701 GENERAL.** This section contains information, direction, and guidance for principal operations inspectors (POI) to use for the evaluation of aircraft dispatcher qualification curriculum segments for all categories of training and for the content of aircraft dispatcher recurrent and requalification training curriculums.

**A. Initial Qualification.** Title 14 of the Code of Federal Regulations (14 CFR) part 121, § 121.422(b) requires that the aircraft dispatcher qualification curriculum segment of all initial qualification categories of training (initial new-hire, initial equipment, and transition) must contain a competency check. However, only the qualification curriculum segment of the initial new-hire or initial equipment category of training requires operating familiarization. In addition, § 121.463(d) requires that an aircraft dispatcher be familiar with the essential operating procedures for each segment of the operation, such as area or desk, over which the aircraft dispatcher exercises jurisdiction. One means an operator may use to comply with this rule is to conduct a competency check on a representative area of the operation in which the aircraft dispatcher is qualified.

**B. Currency.** Title 14 CFR requires that aircraft dispatchers complete both an annual competency check and an operational familiarization flight, and that they maintain a familiarity with the operating procedures for the operational segment over which they exercise jurisdiction.

1) Section 121.433(c)(1)(ii) requires that each aircraft dispatcher complete recurrent training and a competency check every 12 calendar-months.

2) Section 121.463(c) requires that each aircraft dispatcher complete recurrent operational familiarization every 12 calendar-months in one type of aircraft from each aircraft group in which the aircraft dispatcher is qualified to dispatch.

NOTE: A competency check, or operational familiarization completed in the calendar-month before or in the calendar-month after the training/checking month, is considered to have been completed in the training/checking month. This three-month period is termed the eligibility period (see Volume 3, Chapter 22, Section 1 for further definition).

3) Section 121.463(d) requires that each aircraft dispatcher be "...familiar with all essential operating procedures for that segment of the operation over which he exercises dispatch jurisdiction."

**C. Requalification.** Part 121 does not specifically address dispatcher requalification. When aircraft dispatchers lose qualification in accordance with part 121, they must requalify prior to operating as an aircraft dispatcher. Section 121.415(g)(1) requires that, in addition to

initial, transition, and recurrent categories of training, each aircraft dispatcher be provided with the necessary training for maintaining proficiency on each airplane and operation in which the dispatcher serves. It is the operator's responsibility to develop the requalification training curriculum to restore a previously qualified dispatcher to a qualified status. The direction and guidance of this section is provided to standardize POI approval of requalification training curriculums.

**3-1702 COMPETENCY CHECKS.** Section 121.422(b) requires that an aircraft dispatcher demonstrate both knowledge and ability to a supervisor or ground instructor during a competency check. The definition of supervisor is any person that the operator has designated to conduct the competency check. A supervisor does not necessarily have to be a person with a management title. Section 121.422(b) authorizes a ground school instructor to conduct a competency check. The instructor must be currently qualified as an aircraft dispatcher for the operator. During the competency check, the candidate only has to demonstrate knowledge and ability concerning those geographic areas for which the candidate is qualifying.

**A. Conduct of Check.** The competency check must be a comprehensive evaluation in which the supervisor observes all aspects of the dispatch function. A portion of the competency check must consist of the aircraft dispatcher candidate releasing actual flights. If the candidate is not currently qualified, a fully qualified aircraft dispatcher must review and sign all required paperwork. The supervisor may conduct the remaining portion of the competency check in a classroom or other environment that enables the candidate to demonstrate knowledge and ability in those areas that may not occur during a routine duty period.

NOTE: Flight releases under the special fuel reserves, as noted in Operations Specifications (OpSpecs) paragraph B043, and planned in-flight releases under OpSpecs paragraph B044 should be observed under actual conditions if possible.

**B. Differences in Competency Checks for Each Category.** Inspectors should use the following guidance when evaluating competency checks in the following training categories:

**1) Initial New-Hire.** Aircraft dispatcher initial new-hire competency checks should include all of the types of airplanes the aircraft dispatcher will be qualified to dispatch. The POI may approve a competency check of representative types when, in the POI's judgment, a check including all types is impractical or unnecessary. Operators must make initial new-hire competency checks comprehensive to allow the aircraft dispatcher candidate to adequately demonstrate knowledge and ability in normal and abnormal situations.

**2) Initial Equipment and Transition.** Aircraft dispatcher initial equipment checks and transition checks may be limited solely to the dispatch of the types of airplanes on which the aircraft dispatcher is qualifying (unless the check is to simultaneously count as a recurrent check).

**3) Recurrent and Requalification.** Aircraft dispatcher recurrent and requalification competency checks must encompass a representative sample of aircraft and routes for which the aircraft dispatcher maintains current qualification.

**4) Special Operations.** When an aircraft dispatcher is qualified in Extended Operations (ETOPS), or in operations conducted according to OpSpec paragraphs B043 or B044, an appropriately qualified supervisor or inspector will observe and evaluate these functions.

**C. Required Proficiency Level.** The aircraft dispatcher candidate must be able to successfully dispatch all flights in the time the operator normally allows a fully qualified aircraft dispatcher candidate to accomplish the same amount of work. Evaluators must determine that the candidate's proficiency is of a level that the successful outcome of the dispatch work is never in doubt.

**3-1703 OPERATIONAL FAMILIARIZATION FLIGHTS.** Title 14 CFR provides little guidance for the accomplishment of operational familiarization flights except for the establishment of a minimum hour requirement. An aircraft dispatcher must accomplish operational familiarization in one aircraft type of each group when initially qualifying in that group of airplanes and annually thereafter. Section 121.463(a)(2) specifies that the substitution of 1 hour of flight time for each additional takeoff and landing may reduce the 5 hours of operational familiarization to 2 hours, 30 minutes.

**A. Training Objectives.** POIs will ensure that operators make effective use of initial and recurrent familiarization flights to achieve valid training objectives as follows:

1) The flights selected should take the aircraft dispatcher candidate through the representative areas in which the candidate is to be qualified. The flights should transit a major terminal area within the region. For operational familiarization flights in succeeding years, the operator should have a plan to systematically expose an aircraft dispatcher to different routes and terminal areas in the aircraft dispatcher's area of responsibility.

2) POIs should ensure that the aircraft dispatchers responsible for extended overwater routes are provided operational familiarization with those routes and with flightcrew procedures, as well as with domestic routes. Aircraft dispatchers with responsibility for ETOPS and operations according to OpSpec paragraphs B043 and B044 should observe these operations.

**B. Reduction of Hours.** POIs will ensure that reduced operational familiarization hours do not forfeit the operator's training objectives for aircraft dispatchers.

**C. Operational Familiarization in a Simulator.** Title 14 CFR permits aircraft dispatchers to accomplish operational familiarization in a simulator. POIs should encourage operators to take advantage of this provision (after the aircraft dispatcher is qualified) to allow dispatchers to observe Line-Oriented Flight Training (LOFT) and cockpit resource management training of flightcrew members. This training relates directly to aircraft dispatcher duties. POIs will ensure, however, that approval is not given for operational familiarization repeatedly conducted in a simulator in lieu of actual line flights. POIs must not approve use of a simulator in lieu of actual flights in the initial new-hire or initial equipment categories of training. If circumstances exist (e.g., medical or physical) that necessitate deviation from this policy, POIs may request such a deviation from the Air Transportation Division (AFS-200). POIs may request this deviation by memo, through the regional Flight Standards division (RFSD). Deviation

requests may be submitted via electronic mail. All requests must include an explanation of the circumstances requiring the deviation.

NOTE: Title 14 CFR does not allow for the reduction of hours in a simulator.

NOTE: When an operator introduces a new group of aircraft into service, an aircraft dispatcher may serve for 90 days from that date without having completed the required operational familiarization.

**3-1704 QUALIFICATION CURRICULUM SEGMENTS OF INITIAL NEW-HIRE AND INITIAL EQUIPMENT CATEGORIES OF TRAINING.** Title 14 CFR clearly specifies the events of an aircraft dispatcher initial training qualification curriculum segment. Inspectors should ensure that the operator's course outline submitted for initial approval contains at least each required module and the regulatory citation. Before granting final approval, POIs will ensure that supervisors are requiring adequate standards of proficiency on aircraft dispatcher competency checks and that aircraft dispatcher operational familiarization flights meet valid training objectives.

**3-1705 QUALIFICATION CURRICULUM SEGMENTS IN THE TRANSITION CATEGORY OF TRAINING.** Section 121.422 clearly specifies the events of a transition training qualification curriculum segment. The operator's course outline submitted for initial approval only has to contain the specified aircraft dispatcher competency check. The aircraft dispatcher transition category of training does not require operational familiarization. If the competency check is to be simultaneously counted as a recurrent check, however, it requires operational familiarization as a training module of the recurrent category of training. Before granting final approval, POIs will ensure that supervisors require an adequate standard of proficiency on aircraft dispatcher competency checks.

**3-1706 RECURRENT TRAINING.** Sections 121.427 and 121.415 require that operators conduct aircraft dispatcher recurrent training to ensure that each dispatcher remains adequately trained and proficient in assigned duties and responsibilities in relation to each assigned airplane and type of operation. Section 121.415(g)(2) also requires aircraft dispatcher training in new equipment, facilities, procedures, and techniques.

**A. Training Requirement.** Section 121.433(c)(1)(ii) requires that each aircraft dispatcher complete recurrent training every 12 calendar-months. Operators must also conduct a competency check of each aircraft dispatcher and ensure that each aircraft dispatcher completes 5 hours of operational familiarization flights every 12 calendar-months, as required by § 121.463(c). The preferred procedure is for the operator to align the month in which the aircraft dispatcher training, the competence check, and the operational familiarization flight are due.

**B. Programmed Hours.** Section 121.427(c)(3) specifies the minimum programmed hours of instruction for recurrent training curriculum segments. The objective of aircraft dispatcher recurrent training is to ensure that aircraft dispatchers remain proficient in assigned duties and responsibilities. The aircraft dispatcher meets this objective when he or she can perform at an acceptable level of proficiency immediately before entering the next cycle of

recurrent training, which may require more training hours than specified by the regulation. The minimum required hours are as follows:

- Group I reciprocating powered airplanes, 8 hours;
- Group I turbopropeller-powered airplanes, 10 hours; and
- Group II airplanes, 20 hours.

**C. Recurrent Training Course Content.** Section 121.427 requires recurrent training in each ground training subject required for initial qualification. Sections 121.415 and 121.422 outline these subjects. Inspectors must ensure that operators have a means of identifying and correcting deficiencies in each aircraft dispatcher's knowledge and proficiency in each of the required areas.

1) Section 121.415(g)(2) requires training in new equipment, facilities, procedures, and techniques. Operators should allot a block of time in recurrent or specialized training each year for such topics. They should also address current problems and concerns. This block of recurrent training should undergo revision on an annual cycle.

2) Recurrent training on each aircraft type, including differences training, must be conducted for aircraft dispatchers every year. This training must directly and specifically relate to aircraft dispatcher duties and may not be simply a repeat of the training given to flightcrew members. The amount of training given to the aircraft dispatcher must ensure the aircraft dispatcher's continued proficiency in duties relative to each airplane type. Airplane training, however, cannot be given to the exclusion of the other required training.

**D. Approval.** The operator should prepare a course outline for initial approval which contains details of the proposed training hours and an outline of the broad topic areas to be covered. The POI shall evaluate the course content by using the job aids in Volume 3, Chapter 22, Sections 3 and 4.

1) The training hours proposed for each year in the course outline should initially meet or exceed regulatory specifications, when required. Usually, the required recurrent training must be accomplished in the minimum hours specified by regulation for simple operations of one or two types of aircraft. The involvement of complex operations and several different airplane types normally requires more hours. Operators and POIs can only determine the actual training hours required by observing and assessing the effectiveness of the training provided.

2) After final approval, the operator may vary the content of the blocks of training designated for current topics.

**3-1707 AREA FAMILIARIZATION.** Operators typically assign aircraft dispatchers to exercise authority over a particular geographic area, but may require that the aircraft dispatcher maintain familiarity over additional areas. Section 121.463(d) requires operators to ensure that each aircraft dispatcher is familiar with all essential operating procedures in a particular segment or geographic area before assigning the dispatcher jurisdiction over revenue flights through that area.

**A. Criteria.** Operators must develop the criteria that identifies when an aircraft dispatcher is not current to work a segment and to develop the necessary procedures for familiarization. The means the operator may use to identify when a dispatcher is not current depends on many factors. These factors can include the complexity of the particular segment's operation, the experience of the dispatcher, and the dispatcher's length of time away from the position.

**B. Refamiliarization.** Depending on the situation, the method the operator uses to reestablish familiarization may be as simple as a briefing by a qualified dispatcher, or as involved as a competence check by a supervisor.

**3-1708 REQUALIFICATION TRAINING.** Aircraft dispatchers that fail to complete recurrent training, a competency check, or operational familiarization within the eligibility period must complete requalification training before they can perform unsupervised in revenue service. The content and length of the requalification curriculum depends on the length of time the aircraft dispatcher has been unqualified. POIs must ensure that the requalification curriculum segment outlines contain specific programmed hours and events for approval (see Table 3-93, Requalification Training, for the guidelines for POIs to use for this purpose). Operators and POIs should understand that the basis for requalification is an aircraft dispatcher's demonstration of individual proficiency through a competency check, and the accomplishment of delinquent training and checking events. An aircraft dispatcher must be given the amount of training required to reach an acceptable state of proficiency. The amount of hours for requalification training can never be less than the time required for annual recurrent training. If an aircraft dispatcher reaches a state of proficiency in fewer hours than programmed, the aircraft dispatcher does not have to complete the remaining programmed hours.

**Table 3-93. Requalification Training**

| <b>Amount of Time Past Month Due</b>                             | <b>Ground Training Segment</b>   | <b>Qualification Segment</b>                          |
|--|--|---|
| Up to 3 calendar-months:   | Recurrent training (if not accomplished in eligibility period).                          | Any module not accomplished in eligibility CC, or OF. |
| More than 3 and less than 6 months:                              | Eight hours remedial and (if not accomplished in eligibility period) recurrent training. | CC and (if not accomplished in eligibility) OF.       |
| More than 6 and less than 12 months:                             | Eight hours remedial, recurrent training, and on-the-job training (OJT) proficiency.     | CC and OF.  |
| More than 12 and less than 36 months:                            | Sixteen hours remedial, recurrent training, and OJT proficiency.                         | CC and OF.  |
| More than 36 months:   | Initial training.  | CC and OF.  |
| KEY: CC = Competency Check.<br>OF = Operational Familiarization. |  |   |

**RESERVED.** Paragraphs 3-1709 through 3-1725.

**VOLUME 3 GENERAL TECHNICAL ADMINISTRATION****CHAPTER 23 FLIGHT ATTENDANT TRAINING AND QUALIFICATION PROGRAMS****Section 2 Flight Attendant Training Approval Process**

**3-1746 GENERAL.** Flight Attendant (F/A) training curriculum approvals follow the same five-phase general process for approval or acceptance described in Volume 3, Chapter 1, Section 1, of this handbook. Information and guidance regarding each phase of the approval process is located in Volume 3, Chapter 19, Section 2. Inspectors should refer to Figure 3-107, Job Aid for F/A Training Conducted Under 14 CFR Part 121, as a guideline during this approval process.

**3-1747 REVISIONS TO TRAINING CURRICULUMS.** Volume 3, Chapter 19, Section 2, paragraph 3-1111 of this handbook addresses procedures for proposed revisions to training curriculums, including any proposal to reduce the approved number of training hours. Curriculum hours and subject matter should not be reduced to the extent that a curriculum cannot meet its goals and objectives; in all cases, the curriculum should ensure that the crewmember stays adequately trained. Only basic indoctrination, initial, and recurrent training under Title 14 of the Code of Federal Regulations (14 CFR) part 121 have specified numbers of programmed hours. For all other curriculums, only the subject matter requirements or objectives are stated in the regulations. Reduction of hours is permitted under part 121 operations for basic indoctrination, initial ground, and recurrent training; however, the specified subjects should still be covered. When an established operator requests a reduction in the number of programmed hours, the operator must demonstrate to the Administrator that, for the applicable student's level of experience, the reduction will not be detrimental in achieving the requisite level of competency. Reductions in recurrent training classroom hours from the 12 hours set forth in the regulations should be discouraged when there are several different types and models of aircraft in a fleet, except upon showing of exceptional, time-saving, and effective training techniques such as separate mock-ups for each aircraft type and model. If a reduction in programmed hours is approved, the POI must provide the certificate holder with a letter stating the basis for the approval. The same conditions upon which approval for the reduction were based should continue. However, any change or addition of aircraft type to the operator's fleet of aircraft should necessitate review of the reduction of the number of programmed hours. Transition, differences, and upgrade ground training curriculums are derived from the applicable initial ground training curriculum. Therefore, upon approval of the Administrator, an established operator may omit particular subjects and have fewer hours than in the initial training curriculum. For this to be acceptable, the operator must show that the material is adequately addressed in another manner (such as recurrent training), that portions are not pertinent to the operation, or that the material can be sufficiently covered in less than the programmed hours approved in the initial training curriculum. When increases in recurrent or initial training are mandated by the Federal Aviation Administration (FAA), as happened when security training was required, these increases would not be compensated for by decreases in the hours of existing training in other areas.

**Figure 3-107. Job Aid for F/A Training Conducted Under 14 CFR Part 121**

F/A Training Program Job Aid for 14 CFR Part 121 Operations

A. This document was prepared to assist the principal operations inspector (POI) in the approval of F/A training conducted under part 121 operations. The suggested way to use this job aid is as follows:

- (1) The POI should have this document copied.
- (2) The POI's recommendations should be added to the copy.
- (3) The POI should give this document to the appropriate representative of the carrier and ask that person to record how each item on the job aid is covered.
- (4) The POI can then determine which items are satisfactory and which items need changes.
- (5) When the POI is satisfied that a given item is acceptable, the POI should put any appropriate remarks next to that item, then that item should be initialed and given a date of approval.
- (6) If a letter of reduction is issued regarding any training program, the letter must be kept with the training program.

B. The POI should also ensure the proficiency of instructors, the applicability of training materials, and the quality of learning.

C. The operator's assigned principal security inspector (PSI) should be coordinated with during the review of the operator's security and hazardous materials procedures that are contained in the operator's training programs.

D. The operator should provide the POI with the Drug Testing Program approved by the FAA Regional Drug Abatement Program Manager.

E. If the POI wants to be informed about, or be able to answer questions regarding the operator's approved program concerning Department of Transportation (DOT) Part 382, Nondiscrimination of Handicapped Individual in Air Travel, the POI should request a copy of the program from the operator. This program is approved by the Deputy Assistant Counsel for Regulation and Enforcement for the DOT.

**JOB AID FOR F/A TRAINING CONDUCTED UNDER 14 CFR PART 121**

|  | Initial Approval | Final Approval |
|--|------------------|----------------|
| § 121.401 Training Program: General.   |                  |                |
| § 121.403 Training Program: Curriculum.  |                  |                |
| § 121.415 Crewmember Training Program Requirements.  |                  |                |
| § 121.417 Crewmember Emergency Training (for each aircraft type, model, and configuration. |                  |                |
| (a) Assignments.   |                  |                |
| (b) Procedures.  |                  |                |
| (c) Emergency Drills.  |                  |                |
| (d) Overwater Qualifications.  |                  |                |
| (e) Above 25,000 Feet.   |                  |                |
| § 121.418(a) Differences Training.   |                  |                |
| § 121.421 F/As: Initial and Transition Ground Training.                                    |                  |                |
| § 121.427 Recurrent Training.  |                  |                |
| § 121.434 Operating Experience.  |                  |                |

Remarks:

**JOB AID FOR F/A TRAINING CONDUCTED UNDER 14 CFR PART 121**

| § 121.401, Training Program: General.   | Initial Approval | Final Approval |
|---|------------------|----------------|
| (a)(1) Handling of dangerous or magnetized material, if part of assigned duties.  |                  |                |
| (2) Adequate facilities and qualified instructors.  |                  |                |
| (3) Training material for each airplane type, and particular variation current and adequate (including training devices). |                  |                |
| (b) Provisions to ensure and record that training and competence checks are given during the required calendar-month.     |                  |                |
| (c)(1) Each responsible person shall certify as to the proficiency and knowledge of the crewmember.                       |                  |                |
| (2) Certification contained in crewmember's records.  |                  |                |

Remarks:

**JOB AID FOR F/A TRAINING CONDUCTED UNDER 14 CFR PART 121**

| § 121.403, Training Program: Curriculum.   | Initial Approval | Final Approval |
|--|------------------|----------------|
| (a) Written training program for each type of airplane is available and current. (This page should be copied for each type of airplane.) |                  |                |
| (b) Each curriculum must include the following:  |                  |                |
| (1) A list of principal ground training subjects, including emergency training subjects, as provided.                                    |                  |                |
| (2) A list of all training devices mockups, system trainers, or other training aids that the certificate holder will use.                |                  |                |
| (3) Not applicable.  |                  |                |
| (4) Not applicable.  |                  |                |
| (5) The programmed hours of training that will be applied to each phase of training.   |                  |                |
| (6) A copy of each statement issued by the Administrator under § 121.405(d) for reduction of programmed hours of training.               |                  |                |

Remarks:

**JOB AID FOR F/A TRAINING CONDUCTED UNDER 14 CFR PART 121**

| § 121.415, Crewmember Training Requirements.<br>NOTE: The following paragraphs were adapted from 14 CFR, and only those applicable to F/As were included.                      | Initial Approval | Final Approval |
|--|------------------|----------------|
| (a) Each training program must provide the following ground training as appropriate to the particular assignment of the crewmember:  |                  |                |
| (1) Basic indoctrination ground training for newly hired crewmembers, including 40 programmed hours of instruction, unless reduced under § 121.405, in at least the following: |                  |                |

|  |                 |  |
|--|-----------------|--|
| (i) Duties and responsibilities of crewmembers, as applicable;   |                 |  |
| (ii) Appropriate provisions of 14 CFR;   |                 |  |
| (iii) Not applicable.  |                 |  |
| (iv) Appropriate portions of the certificate holder's operating manual.  |                 |  |
| (2) Initial and transition ground training specified in § 121.421:   |                 |  |
| (3) Emergency training as specified in § 121.417.  |                 |  |
| (b) Not applicable.  |                 |  |
| (c) Recurrent ground training as provided in § 121.427.  |                 |  |
| (d) Differences training as specified in § 121.418 (a).  |                 |  |
| (e) Not applicable.  |                 |  |
| (f) Not applicable.  |                 |  |
| (g) Each program must ensure the following for each crewmember:  |                 |  |
| (1) that each crewmember remains adequately trained and currently proficient with respect to each airplane.  |                 |  |
| (2) that each crewmember is adequately trained to qualify in new equipment, facilities, procedures, and techniques including modifications to airplanes. |                 |  |
|  | Number of hours |  |
| Number of programmed hours (if hours are reduced, give reason in Remarks area below.)  |                 |  |

Remarks:

**JOB AID FOR F/A TRAINING CONDUCTED UNDER 14 CFR PART 121**

| § 121.415, Crewmember Training Requirements-Continued.   | Initial Approval | Final Approval |
|--|------------------|----------------|
| Crewmember Basic Indoctrination Training programs must include, but are not limited to, the following:               |                  |                |
| Admission to flight deck.  |                  |                |
| Authority of pilot-in-command (PIC).   |                  |                |
| Chain of command.  |                  |                |
| Passenger seatbelt discipline.   |                  |                |
| Exit seat requirements and procedures.   |                  |                |
| Smoking requirements and procedures.   |                  |                |
| Reporting of equipment malfunctions.   |                  |                |
| Carriage of armed passengers.  |                  |                |
| Sterile cockpit procedures.  |                  |                |
| Crewmember communication and coordination procedures.  |                  |                |
| Need for tray tables and seatbacks to be in full upright position for movement on the surface, takeoff, and landing. |                  |                |
| Travel of disabled (including stowage of canes, assistive devices, wheelchairs, et cetera).                          |                  |                |
| Procedures with unusual passengers (such as those who are pregnant or require a stretcher).                          |                  |                |

|   |  |  |
|---|--|--|
| Requirements and procedures for use and carriage of either infant or child restraint systems.   |  |  |
| Carry-on baggage requirements, including properly securing before entry door is closed for movement on the surface, takeoff, and landing. |  |  |

Remarks:

**JOB AID FOR F/A TRAINING CONDUCTED UNDER 14 CFR PART 121**

| § 121.415, Crewmember Training Requirements-Continued.   | Initial Approval | Final Approval |
|--|------------------|----------------|
| Carriage of cargo in passenger compartment.  |                  |                |
| Recognition of hazardous materials.  |                  |                |
| Storage and handling of hazardous materials, if they are carried in the cabin.   |                  |                |
| Stowage of crewmember.   |                  |                |
| Proper stowage of galley equipment for movement on the surface, takeoff, landing, and in flight (including galley and ticket carts). |                  |                |
| Securing of restraint systems when not in use.   |                  |                |
| Passenger briefings and demonstrations in the following areas:   |                  |                |
| Pre-takeoff.   |                  |                |
| Post-takeoff.  |                  |                |
| Pre-landing.   |                  |                |
| Prohibition against the use or carriage of narcotics.  |                  |                |
| Procedures for the use of electronic devices.  |                  |                |
| Distribution of F/As.  |                  |                |
| Need for required and non-required F/As to be seated during movement on the surface, takeoff, and landing.                           |                  |                |
| Number of F/As or substitutes at stops.  |                  |                |
| F/A procedures during refueling.   |                  |                |

Remarks:

**JOB AID FOR F/A TRAINING CONDUCTED UNDER 14 CFR PART 121**

| § 121.417, Crewmembers Emergency Training Requirements (given during initial, recurrent, differences, and transition training):  | Initial Approval | Final Approval |
|--|------------------|----------------|
| (a) Each training program must provide the emergency training set forth in this section with respect to each airplane type, model, and configuration, and each required crewmember.  |                  |                |
| (b) Emergency training must provide the following:<br>(1) Instruction in emergency assignments and procedures, including coordination among crewmembers.   |                  |                |
| (2) Individual instruction in the location, function, and operation of emergency equipment, including the following items: (NOTE: The instructor should ensure that each F/A knows the function of, and can locate and operate, each piece of equipment.). |                  |                |

|  |  |  |
|--|--|--|
| Ditching equipment.  |  |  |
| Evacuation equipment (which includes arming the door or putting the girt bar in place during normal operations).                           |  |  |
| F/A restraint systems.   |  |  |
| First aid equipment and its proper use.  |  |  |
| First aid oxygen.  |  |  |
| Oxygen for medical use by passengers (if applicable), including special training on chemically generated oxygen when used by the operator. |  |  |
| Medical kit and its use.   |  |  |

Remarks:

### **JOB AID FOR F/A TRAINING CONDUCTED UNDER 14 CFR PART 121**

| § 121.417, Crewmember Emergency Training -Continued.  | Initial Approval | Final Approval |
|---|------------------|----------------|
| Portable fire extinguishers with emphasis on type of fire extinguishers appropriate to the class of fire.   |                  |                |
| Protective Breathing Equipment (PBE).   |                  |                |
| Flashlights.  |                  |                |
| Crash ax.   |                  |                |
| Cockpit key.  |                  |                |
| Emergency lights.   |                  |                |
| Megaphones.   |                  |                |
| Public address (PA) system.   |                  |                |
| Interphone system.  |                  |                |
| Emergency exits in the emergency mode with the evacuation slide or raft attached (if applicable).   |                  |                |
| Training emphasis on opening exits in adverse conditions (wind, gear failure, water, et cetera).  |                  |                |
| (3) Instruction in the handling of emergency situations including the following: rapid decompression situations following the FAA-recommended procedures: |                  |                |
| Recognize decompression.  |                  |                |
| Grab nearest oxygen mask.   |                  |                |
| Sit down or hold on to something well secured.  |                  |                |
| Wait for word from the flight deck before moving around.  |                  |                |

Remarks:

### **JOB AID FOR F/A TRAINING CONDUCTED UNDER 14 CFR PART 121**

| § 121.417, Crewmember Emergency Training – Continued.                             | Initial Approval | Final Approval |
|---|------------------|----------------|
| Instruction in handling fire in flight or on the surface including the following: |                  |                |
| Cabin fire prevention.  |                  |                |
| Lavatory fire procedures.   |                  |                |
| Light ballast fire procedures.  |                  |                |

|   |  |  |
|---|--|--|
| Smoke control procedures.   |  |  |
| Fire control when volatile fuel is involved.  |  |  |
| Instruction emphasizing use of electrical equipment and related circuit breakers found in the cabin area including the following: |  |  |
| Galley.   |  |  |
| Service centers.  |  |  |
| Galley lifts (when applicable).   |  |  |
| Lavatories.   |  |  |
| Movie projectors and screens.   |  |  |
| Instruction in the following evacuation situations.   |  |  |
| Forewarned (anticipated land and ditching):   |  |  |
| Crewmember coordination.  |  |  |
| Cabin preparation.  |  |  |
| Galley securing (including galley and other carts).   |  |  |
| Baggage stowage.  |  |  |
| Passenger preparation.  |  |  |
| Instructions given to passengers.   |  |  |
| Directions to assume brace-for-impact positions commands given to passengers.   |  |  |
| Initiation of passenger evacuation.   |  |  |
| Passenger flow redirection.   |  |  |
| Passenger care following evacuation.  |  |  |

Remarks:

**JOB AID FOR F/A TRAINING CONDUCTED UNDER 14 CFR PART 121**

| Unforewarned (unanticipated land and water):  | Initial Approval | Final Approval |
|---|------------------|----------------|
| F/A readiness.  |                  |                |
| Crewmember coordination.  |                  |                |
| Condition assessment.   |                  |                |
| Commands given to passengers.   |                  |                |
| Passenger redirection.  |                  |                |
| Passenger care following evacuation.  |                  |                |
| Unwarranted evacuation (unneeded crewmember and passenger initiated) crewmember coordination.                                       |                  |                |
| Condition assessment.   |                  |                |
| Stopping the evacuation.  |                  |                |
| Passenger care following evacuation.  |                  |                |
| Situations when persons needing assistance, and their attendants might need help to leave the airplane during emergency situations. |                  |                |
| Post-accident survival training.  |                  |                |
| Illness or injury.  |                  |                |
| Other abnormal situations involving crewmembers or passengers such as the following:  |                  |                |

|   |  |  |
|---|--|--|
| Procedures for when passengers abuse an F/A.                              |  |  |
| Procedures for passengers under the influence of intoxicating substances. |  |  |
| Procedures for other problem passengers who might jeopardize safety.      |  |  |
| Procedures for when a crewmember is incapacitated.                        |  |  |
| Procedures for turbulent air, including the following:                    |  |  |
| Crewmember coordination.  |  |  |
| Maintaining seatbelt discipline by making periodic announcements.         |  |  |
| Hijacking and other unusual situations.                                   |  |  |
| (4) A review and discussion of previous accidents and incidents.          |  |  |

Remarks:

**JOB AID FOR F/A TRAINING CONDUCTED UNDER 14 CFR PART 121**

| § 121.417, Crewmember Emergency Training-Continued.   | Initial Approval          | Final Approval            |
|---|---------------------------|---------------------------|
| (c) Each crewmember must accomplish at least the following emergency drills and must actually operate the following emergency equipment during initial training and once each 24 calendar-months during recurrent training for every type of aircraft in which they serve. (An alternate recurrent training may be accomplished by approved pictorial presentation or demonstration.) |                           |                           |
| (1) One-time emergency drill during initial training. Each crewmember must perform the following:   |                           |                           |
| (i) At least one approved fire fighting drill using at least one type of installed hand fire extinguisher, appropriate for type of fire, using the type of installed PBE. (May be a simulated fire if another fire fighting drill was performed with actual fire.)  |                           |                           |
| (ii) An emergency evacuation drill with each person egressing the airplane or approved training device using at least one type of installed evacuation slide.   |                           |                           |
|   | Normal Mode<br>Int. 24mth | Emerg. Mode<br>Int. 24mth |
| (2) Additional emergency drill requirements to be accomplished during initial training and once each 24 months during recurrent training. Each crewmember must perform the emergency drill and operate the equipment:   |                           |                           |
| (A) Emergency Exits: List each kind (type) exit and slide.  |                           |                           |
|   |                           |                           |
|   |                           |                           |
|   |                           |                           |
| Int. = Initial 24mth = 24 months  |                           |                           |

Remarks:

**JOB AID FOR F/A TRAINING CONDUCTED UNDER 14 CFR PART 121**

|   |                  |                 |
|---|------------------|-----------------|
| § 121.417, Crewmember Emergency Training-Continued.   | Initial Training | Every 24 Months |
| (B) Fire extinguisher (Actually operate each kind.)   |                  |                 |
| Water.  |                  |                 |
| Halon.  |                  |                 |
| CO2.  |                  |                 |
| Dry chemical.   |                  |                 |
| Other.  |                  |                 |
| Actually put out fire with at least one kind of fire extinguisher. If actual fire put out during PBE training, then may use simulated fire.   |                  |                 |
| (C) Oxygen Equipment.<br>(Actually operate each type (kind) of emergency oxygen system to include PBE. Include instruction on manual deployment of oxygen masks. List kinds of systems, which may differ between aircraft models as well as types.) |                  |                 |

|   |                    |                |                      |
|---|--------------------|----------------|----------------------|
|   | Donning Int. 24mth | Use Int. 24mth | Inflation Int. 24mth |
| (D) Flotation devices:  |                    |                |                      |
| Don and use each kind of individual flotation device. List each kind (type) of life jacket. |                    |                |                      |
|   |                    |                |                      |
| List each kind (type) of flotation device.  |                    |                |                      |
| (E) Ditching, as appropriate.   |                    |                |                      |
| (1) Use of life lines.  |                    |                |                      |
| (2) Board passengers and crewmembers into raft, as appropriate.                             |                    |                |                      |

Remarks:

**JOB AID FOR F/A TRAINING CONDUCTED UNDER 14 CFR PART 121**

|  |                  |                 |
|--|------------------|-----------------|
| § 121.417, Crewmember Emergency Training-Continued.  | Initial Training | Every 24 Months |
| (e) Operations above 25,000 feet. Crewmembers who serve in operations above 25,000 feet must receive instruction in the following: |                  |                 |
| Respiration.   |                  |                 |
| Hypoxia.   |                  |                 |
| Duration of consciousness without supplemental oxygen at an altitude.  |                  |                 |
| Gas expansion.   |                  |                 |
| Gas bubble formation.  |                  |                 |
| Physical phenomena associated with decompression.  |                  |                 |

|   |  |  |
|---|--|--|
| Incidents of decompression.   |  |  |
| Emergency Evacuation Drills: (each kind)  |  |  |
| Drills should be conducted so each F/A actually operates every piece of emergency equipment and individually demonstrates the ability to perform the following procedures:<br>Unforewarned (unanticipated) evacuation.<br>Crewmembers coordination. |  |  |
| Cockpit/cabin notification.   |  |  |
| Commands given to passengers.   |  |  |
| Use of F/A restraint system.  |  |  |
| Assumption of protective brace positions.   |  |  |
| Actions that might be necessary during evacuation with emergency lights.  |  |  |
| Conditions assessment.  |  |  |
| Door opening.   |  |  |
| Slide activation.   |  |  |
| Passenger care after evacuation.  |  |  |

Remarks:

#### **JOB AID FOR F/A TRAINING CONDUCTED UNDER 14 CFR PART 121**

| § 121.417, Crewmember Emergency Training-Continued.   | Initial Training | Every 24 Months |
|---|------------------|-----------------|
| Forewarned (anticipated) evacuation crew coordination.  |                  |                 |
| Cabin preparation.  |                  |                 |
| Passenger preparation.  |                  |                 |
| Unwarranted (unneeded) evacuation crewmember coordination.  |                  |                 |
| Stopping the evacuation.  |                  |                 |
| Caring for passengers who may have gotten outside of the airplane.  |                  |                 |
| Ditching, if applicable, including but not limited to the following, as appropriate:<br>Cockpit preparation and procedures. |                  |                 |
| Crew coordination.  |                  |                 |
| Passenger briefing.   |                  |                 |
| Cabin preparation.  |                  |                 |
| Donning and inflation of life preservers.   |                  |                 |
| Use of life-lines.  |                  |                 |
| Boarding of passengers and crew into a raft or a slide/raft.  |                  |                 |
| Removal from airplane (or training device) of each kind of life raft.*  |                  |                 |
| Transfer of each kind of slide/raft pack from one door to another.*   |                  |                 |
| Deployment, inflation, and detachment from the airplane (or training device) of each kind of slide/raft pack.*              |                  |                 |

|  |  |  |
|--|--|--|
| *NOTE: Crewmember does not have to operate per § 121.417(c)(2), may observe. |  |  |
|--|--|--|

Remarks:

**JOB AID FOR F/A TRAINING CONDUCTED UNDER 14 CFR PART 121**

|   |         |
|---|---------|
| § 121.418(a), Differences Training.   | Covered |
| (1) Differences training for crewmembers (including F/As) must consist of at least the following as applicable to their assigned duties and responsibilities.<br>NOTE: Differences training for all variations of a particular type of airplane may be included in initial, transition, and recurrent training.<br>(i) Instruction in each appropriate subject or part, as required in initial ground training and determined by the Administrator.<br>List parts or subjects as follows: |         |
| Doors.  |         |
| Window exits.   |         |
| Evacuation slides.  |         |
| Emergency oxygen systems.   |         |
| Emergency equipment location.   |         |
| (ii) Not applicable.  |         |
| (iii) Number of programmed hours of ground training as determined by the Administrator.   |         |

Remarks:

**JOB AID FOR F/A TRAINING CONDUCTED UNDER 14 CFR PART 121**

| § 121.421, F/As: Initial and Transition Ground Training.   | Initial Training | Transition Training |
|--|------------------|---------------------|
| (a) Initial and transition ground training for F/As must include instruction in at least the following areas:  |                  |                     |
| Authority of the PIC.  |                  |                     |
| Passenger handling including the following:  |                  |                     |
| Aircraft type, model, and series.  |                  |                     |
| (Space is provided below for one aircraft type. For carriers having more than one type, this portion of the form should be copied so that each aircraft type has a separate form.) |                  |                     |
| A general description of an airplane that emphasizes characteristics and dominant parts on this aircraft which might have a bearing on the following:                              |                  |                     |
| Evacuations.   |                  |                     |
| Ditchings.   |                  |                     |
| Inflight emergency procedures.   |                  |                     |
| Other related duties.  |                  |                     |
| Use of PA system.  |                  |                     |
| Means of communicating with other crewmembers means of communicating with other crewmembers in unusual situations including attempted hijacking.                                   |                  |                     |
| Proper use of electrical galley equipment and controls for cabin   |                  |                     |

|  |  |  |
|--|--|--|
| heat and ventilation, including the setting of lights for takeoff and landing. |  |  |
|--|--|--|

Remarks:

**JOB AID FOR F/A TRAINING CONDUCTED UNDER 14 CFR PART 121**

| § 121.421, F/As: Initial and Transition Ground Training-Continued.  | Initial Training | Transition Training |
|---|------------------|---------------------|
| (b) Competence check to determine a crewmember’s ability to perform assigned duties and responsibilities. Competence check should cover each type, model, and series of aircraft, each piece of safety equipment, and each emergency procedures applicable to that crewmember. It should consist of hands-on checks, observed by the instructor, with each crewmember individually operating each piece of equipment, and taking written exams given in the classroom. Occasionally, on a limited basis, one-on-one oral exams may be used. |                  |                     |
| Basic Indoctrination Training must consist of 40 programmed hours. As per § 121.405, hours may be reduced. If hours are reduced, the reason should be given in the Remarks area below.  |                  |                     |
| • Plus 8 hours if serving on reciprocating powered aircraft.  |                  |                     |
| • Plus 8 hours if serving on turbopropeller powered aircraft.   |                  |                     |
| • Plus 16 hours if serving on Group II aircraft.  |                  |                     |

Remarks:

**JOB AID FOR F/A TRAINING CONDUCTED UNDER 14 CFR PART 121**

| § 121.427, Recurrent Training (including differences training, if applicable).  | Covered |
|---|---------|
| (a) Recurrent training must ensure that each F/A is adequately trained and currently proficient with respect to each type of airplane.  |         |
| (b) Recurrent ground training programs for flight attendants must include at least the following:   |         |
| (1) A quiz or other review to determine the state of the crewmember’s knowledge. Some form of written test is usually preferred. It is desirable to have this quiz or other review in the classroom.  |         |
| Minimum satisfactory passing criteria.  |         |
| Crewmember’s status when criteria not met.  |         |
| (2) Subjects required for initial and emergency training (see appropriate parts of this document).  |         |
| (3) A competence check that should cover each type, model, and series of aircraft, each piece of safety equipment, and each emergency procedure. It should consist of hands-on checks, observed by the instructor, with each crewmember individually operating each piece of equipment, and taking written exams given in the classroom. Occasionally, on a limited basis, one-on-one oral exams may be used. |         |

|  | Total Number of Hours | Number of Classroom Hours | Number of Hours for Take-Home Exercises |
|--|-----------------------|---------------------------|---|
| (c) The number of programmed hours required as follows:  |                       |                           |   |
| 12 hours jets.   |                       |                           |   |
| 5 hours turbo props.   |                       |                           |   |
| 4 hours propeller-driven aircraft.   |                       |                           |   |
| NOTE: For example, F/As qualified on an operator's B-727 and CV-580 would be required to have 16 hours of recurrent training.<br>NOTE: If the number of hours is reduced in accordance with § 121.405, give reasons in the Remarks area below. |                       |                           |   |

Remarks:

**JOB AID FOR F/A TRAINING CONDUCTED UNDER 14 CFR PART 121**

| § 121.434, Operating Experience.   | Program provides this for each F/A |
|--|------------------------------------|
| (a) Operating Experience must be done in accordance with the following requirements:                                   |                                    |
| F/As must have satisfactorily completed ground school.   |                                    |
| Operating experience must be acquired during operations conducted under part 121 (including proving or ferry flights). |                                    |
| (b) F/As must perform all F/A-assigned duties under the supervision of a supervisor.                                   |                                    |
| Flight time must be 5 hours.   |                                    |
| Flight time may be 2.5 hours if 2.5 hours have already been completed in approved cabin simulator.                     |                                    |

Remarks:

**RESERVED.** Paragraphs 3-1748 through 3-1765.

## VOLUME 3 GENERAL TECHNICAL ADMINISTRATION

### CHAPTER 23 FLIGHT ATTENDANT TRAINING AND QUALIFICATION PROGRAMS

#### Section 6 Cabin Safety and Flight Attendant Training

**3-1851 FIRE PREVENTION.** This section addresses the need for certificate holders to review their approved training programs and Flight Attendant (F/A) manuals to ensure that the procedures used by air carriers properly address the concerns expressed in this section.

**A.** Crewmember emergency training requires certificate holders to give instruction in the handling of emergency situations, which include potential fire problems related to electrical equipment and circuit breakers.

1) On some aircraft, electrical equipment and related circuit breakers are located in cabin areas including all galleys, service centers, lifts, lavatories, and movie/video centers.

2) Training on the location, function, and related safety procedures for electrical equipment and circuit breakers should focus on eliminating a problem before it becomes a safety hazard.

**B.** Some reported in-flight fire incidents involved the storage of paper products, napkins, plastic or Styrofoam cups, plastic stir sticks, or manuals in galley ovens. In addition, other incidents have been reported involving an aerosol can and a heated can of soup exploding, which injured crewmembers. Using galley ovens for anything other than designated purposes poses a potential safety hazard.

1) Paper, plastic, or cloth products stored in ovens may easily ignite and are difficult to extinguish. Galley ovens used in this manner have been turned on, causing a fire with dense smoke.

2) Many types of plastic or Styrofoam cups and glasses are virtually fireproof. However, some are easily ignited and difficult to extinguish. Since many certificate holders serve beverages in throwaway plastic or Styrofoam cups and glasses, in-flight fire hazards can be reduced by discouraging use of the highly flammable types.

3) Only food that is heated can be stored in ovens. To prevent fires, do not store galley equipment or any other items in ovens. Check ovens and remove any paper products, dry ice, or other materials before heating. Ensure ovens are off for taxi, takeoff, and landing. Turn off ovens before opening oven doors.

**C.** The use of galley ovens as heaters has been reported and one incident resulted in a wide-body aircraft diversion due to a flight deck indication of a lower lobe galley fire. Post landing inspection by maintenance personnel revealed no evidence of a fire and no malfunction of the smoke detection system. Further investigation indicated that all ovens were on and that the oven doors were open in an attempt to heat the lower lobe galley area. Some food particles that had been left in one of the ovens started to smoke and activated the alarm in the flight deck. In

addition to the unnecessary diversion, schedule disruption, and consequent public inconvenience, the open oven doors and exposed hot ovens presented unnecessary safety hazards.

**D.** People dropping smoking materials into lavatory waste containers have caused a number of in-flight fires and smoke detector activations. Title 14 of the Code of Federal Regulations (14 CFR) parts 121 and 135 were amended in 2000, affecting smoking aboard aircraft. Some of the changes to these rules are:

- 1) Smoking is prohibited in any aircraft lavatory at all times.
- 2) Aircraft lavatories must have placards that notify passengers that public law prohibits tampering with smoke detectors.
- 3) The required passenger briefing must include detailed instructions on smoking bans.
- 4) Certificate holders should have procedures in their crewmember manuals and training programs to ensure that all crewmembers are aware of the requirements and of what actions to take regarding the smoking ban regulations.
- 5) Certificate holders should have procedures in their crewmember manuals and training programs to ensure that the trash bin flapper door and waste bin access door are securely closed. Aircraft cleaners sometimes do not close the access door tightly after they empty the trash bin. If the access door is not closed tightly and a trash bin fire were to ignite, air could feed into the trash bin, lessening the effectiveness of the fire extinguisher in the waste bin. If the access door will not close, it must be properly recorded for corrective action.

**E.** An air carrier's F/As must receive practical training in firefighting techniques and the air carrier's manuals should contain adequate procedures for these subjects.

**3-1852 CABIN FLUORESCENT LIGHT BALLAST FIRES.** An overweight landing of a wide-body aircraft fueled for a trans-Pacific flight was narrowly averted following successful handling of a cabin fluorescent light ballast fire which occurred immediately after lift-off.

**A.** An interview of the crew indicated that none had ever heard of a fluorescent light ballast fire and, thus, were totally unfamiliar with its relatively nonhazardous characteristics. This lack of knowledge nearly caused a greater emergency, which could have progressed to a disaster of unknown proportions because the captain was placed in a situation that required a decision to make an emergency return and landing, in spite of the inability to dump fuel and thus reduce weight much below the maximum authorized for landing.

**B.** Ballast fires, though spectacular, are understood to be brief and, for all practical purposes, self-extinguishing. While new ballasts all but eliminate the problem, it is unlikely that older aircraft will be retrofitted in view of the considerable expense involved. Since these conditions may therefore be expected to exist for some time, and since such incidents may become more numerous commensurate with aging of the aircraft fleet, the principal operations inspectors (POI) should take the following steps:

1) Recommend that ground training and/or operations bulletins be initiated to inform flight deck crews and F/As of the causes, characteristics, and degree of hazard associated with fluorescent light ballast fires.

2) Recommend that aircraft Weight and Balance (W&B) data available to the flightcrew be sufficient to provide accurate approach and landing speeds following immediate turnback when an overweight landing is necessary.

### **3-1853 PROCEDURES AND TRAINING FOR EMERGENCY EVACUATIONS.**

A. There have been several instances where the emergency slide girt bar attachment was hindered due to mechanical interferences. Girt bar attachment points can accumulate ice or obstructions such as plastic forks, pencils, etc.

B. These instances indicate a possible deficiency in F/A training, which should be remedied by renewed emphasis in certain areas. Air carrier's training programs should ensure that:

1) F/As are fully aware that manual inflation of escape slides should be attempted if auto-deployment fails.

2) Prior to closing any door, girt bar attachment points are inspected to ensure that they are free from ice or other obstructions that might interfere with engagement of the automatic slide deployment feature.

### **3-1854 TRAINING ON CONDITIONS OF AIRCRAFT FOLLOWING AN ACCIDENT.**

In several accident investigations, the National Transportation Safety Board (NTSB) found that although F/As provided valuable assistance to passengers during emergency situations, they did not always follow their air carrier's approved emergency procedures or perform their duties in accordance with training. The Safety Board reviewed its investigations of accidents and incidents where information was available on F/A performance during emergency situations. The report, titled Flight Attendant Training and Performance During Emergency Situations, NTSB/SIR-92/02, resulted in recommendations to the Federal Aviation Administration (FAA). They included recommendation A-92-69: "Ensure that flight attendant training programs provide detailed guidance on the relative probability of hazards associated with emergency situations such as fire, toxic smoke, and explosion."

A. As the result of accident interviews with F/As, the NTSB concluded that F/A training courses need to emphasize the conditions of the aircraft following an impact. While most F/A training curriculums contain information about this subject, the NTSB believes that training should emphasize the following post-crash topics:

- Fire,
- Debris,
- Toxic fumes, and
- Low probability of explosion.

**B.** Air carriers could show F/As visual presentations of aircraft cabins following a crash. They should emphasize the possibility of cabin floor and aircraft fuselage distortions and breaks. For example, in one accident, part of the cabin was upside down while another fuselage section was relatively level. The level fuselage section's floor had a large break. In addition, debris in the form of carry-on baggage, galley supplies, and other items may dislodge and clutter the aisles. Survivors of accidents have reported climbing over debris and standing on "something" in order to climb out the top of the fuselage.

**C.** Training courses should also address the presence of fire and toxic fumes during and following a crash. The training curriculum should address fire dynamics, including flashovers, other heat patterns associated with super heated air, and the probability of explosion. There is also the problem of toxic fumes. Research and accident histories indicate that when toxic fumes and/or smoke are present, the "quality air" is about armrest level. Most air carriers use a diminished light environment coupled with simulated smoke when conducting evacuation drills, which is a good method for bringing crewmembers' attention to the crash environment. This is especially true when it is followed by a discussion of accidents and incidents.

**D.** Additional post-crash topics should include passenger management procedures immediately following an accident, such as gathering passengers together upwind of smoke/fire out of the path of emergency vehicles approaching the accident, trying to obtain a passenger count, and initially assessing passenger injuries.

**3-1855 AVAILABILITY, CAPABILITIES, AND USE OF EMERGENCY FLOTATION EQUIPMENT.** As a result of an accident that involved a B-727 making an unscheduled landing in water during an approach, survivors experienced difficulties with the location and use of emergency flotation equipment during the aircraft evacuation.

**A.** This particular airplane was equipped with life vests and not flotation-type seat cushions. However, some passengers either used or attempted to use the seat cushions for flotation. The passenger briefing cards in use at the time of the accident depicted the location and use of life vests. During the postcrash investigation, two crewmembers stated that they assumed the seat cushions were approved flotation devices. Two other crewmembers were not sure if the seat cushions were approved flotation devices.

**B.** The survivors experienced numerous difficulties with the location, removal, donning, and inflation of their life vests.

**1)** Some passengers had difficulty removing the life vest from the fabric pouches beneath the seats.

**2)** Others had difficulty in unpacking the life vest from the sealed plastic bag.

**3)** Many had difficulty inflating the life vest. Some life vests recovered after the accident only had one of the two chambers inflated.

**C.** During the postcrash investigation, the NTSB queried several air carriers as to the type of flotation equipment on their airplanes. Some air carriers had airplanes with only flotation-type seat cushions and no life vests. Some had airplanes with only life vests and no

flotation-type seat cushions. Others had a mixed fleet with some airplanes having flotation-type seat cushions and some having life vests.

**D.** This accident indicates possible deficiencies in F/A and flightcrew member training, programs, and pretakeoff passenger briefing procedures. Air carriers should ensure that:

- Flight and cabin crewmember initial and recurrent training programs include detailed information regarding the location, function, and operation of the emergency flotation equipment installed in the aircraft each crewmember operates;
- If an air carrier has a mixed fleet of airplanes (i.e., some having flotation-type seat cushions and some having life vests), flight and cabin crew are aware of the type of equipment available on each airplane during operations; and
- F/As or other appropriate crewmembers must brief passengers on the type, location, and use of required flotation equipment. This briefing must include the type of equipment available at the individual passenger's seat and the method of use in the water, such as putting the arms through the straps and resting the torso on the cushion. When the aircraft is equipped with life preservers, the briefing must include instructions about the location and removal of life preservers from stowage areas, including pouches, and the donning and inflation of the life preservers. If the aircraft is equipped with both flotation cushions and life preservers, F/As should brief passengers on both types of equipment and must brief passengers on the required flotation equipment.

**3-1856 TRAINING ON THE CHEMICALLY GENERATED SUPPLEMENTAL OXYGEN SYSTEM.** In several accident investigations, the NTSB found that although F/As provided valuable assistance to passengers during emergency situations, they did not always follow their air carrier's approved emergency procedures or perform their duties in accordance with training. The NTSB reviewed its investigations of accidents and incidents where information was available on F/A performance during emergency situations. The report, titled Flight Attendant Training and Performance During Emergency Situations, NTSB/SIR-92/02, resulted in recommendations to the FAA. They included recommendation A-92-76: "Update and reissue ACOB 76-4 regarding the operational characteristics of chemically generated passenger supplemental oxygen systems."

**A.** Air carriers should ensure that crewmember training programs and appropriate manuals include detailed information regarding the operational characteristics of the chemically generated passenger supplemental oxygen system. That information should include:

- Canister,
- Lanyard/safety pin,
- Flow initiation mechanism,
- Reservoir bag,
- Oxygen mask,
- Hose,
- Heat shield,

- Heat generation, and
- Oxygen outlets.

**B.** Passenger briefings and demonstrations describe the specific oxygen system used on a flight. Briefings should emphasize the location of passenger oxygen (e.g., overhead units, seat backs, and bulkheads), proper placing of mask on the face, use of adjustment straps, and indications of oxygen flow (reservoir bag).

**C.** Printed instructions on the passenger briefing cards for the use of the passenger chemical supplemental oxygen system should be factual and contain sufficient information for proper use. These instructions should include donning techniques, adjustment requirements, and any action necessary to initiate oxygen flow. In addition, instructions should be provided that direct passengers to secure their own masks before assisting others.

### **3-1857 F/A TRAINING ON THE USE OF FLIGHT DECK EMERGENCY**

**EQUIPMENT.** Air carriers should ensure that F/As are familiar with flight deck emergency equipment. Information about the location and operation of the following flight deck emergency equipment should be included in the air carrier's F/A manuals:

- Flight deck door access,
- Flight deck exits,
- Emergency supplemental oxygen,
- Fire extinguishers,
- Crash axes,
- Protective Breathing Equipment (PBE),
- Any other emergency equipment located in the flight deck, and
- Operation of flight deck seats.

**A.** During initial and transition training, F/As should receive familiarization training on flight deck emergency equipment. Air carriers do not have to require F/As to physically operate the flight deck emergency equipment. Training in flight deck emergency equipment may be accomplished through audiovisual presentations, computer-based instruction, or other instructional media.

**B.** Air carriers should include appropriate procedures regarding flight deck emergency equipment in their manuals and training programs.

### **3-1858 TRAINING IN FIRE CONTROL EQUIPMENT AND RELATED TRAINING**

**DRILLS.** Present regulations require that air carrier training programs include individual instruction in the location, function, and operation of portable fire extinguishers that emphasizes the type of extinguishers used to fight fires of different classes.

**A.** Air carriers should provide instruction to crewmembers in the handling of in-flight fires, fires that occur on the ground, and smoke control procedures, emphasizing electrical equipment and related circuit breakers.

**B.** The following two drills are associated with fire control.

**1) Fire Extinguisher Drill.** A fire extinguisher drill is required every 24 months. During this drill, each crewmember must operate each type of hand-held fire extinguisher installed on the air carrier's airplanes.

**2) PBE/Firefighting Drill.** A PBE/firefighting drill is a one-time requirement consisting of two exercises. Exercise one requires crewmembers to operate the PBE while fighting an actual or simulated fire. Exercise two requires crewmembers to discharge a fire extinguisher and fight an actual fire. The exercises of this PBE/firefighting drill may be combined. When the air carrier combines the exercises of the PBE/firefighting drill, the crewmember discharges a fire extinguisher while fighting an actual fire and while wearing PBE.

NOTE: Some air carriers have elected to use an installed fire extinguisher when accomplishing the PBE/firefighting drill. This could allow the air carrier to simultaneously meet the requirements of the fire extinguishing drill required for the 24-month period.

**C.** Inspectors and members of the air carrier industry asked for clarification about the use of fire extinguishers.

**1)** During the fire extinguisher drill required every 24 months, crewmembers should use each type of fire extinguisher installed on the air carrier's airplanes.

**2)** The POI may approve the use of fire extinguishers that closely simulate the ones installed on the airplane.

**3)** Crewmembers should remove each type of fire extinguisher from its brackets. The brackets should be the same as those on the airplane.

**4)** Crewmembers should demonstrate the proper operation of the fire extinguisher including pulling the trigger. The fire extinguisher does not have to be charged. Nevertheless, it is desirable to have it charged with the appropriate agent or with a material that simulates that agent.

**5)** Crewmembers may use any fire extinguisher when they fight an actual fire as long as each crewmember performs an additional fire extinguisher drill using a handheld fire extinguisher of the type installed by the air carrier. The purpose of fighting an actual fire is to provide crewmembers with the opportunity to experience the effects of facing an actual fire. Of course, air carriers may elect to use an installed fire extinguisher for the actual firefighting drill.

**6)** There is no requirement that a crewmember discharge a halon fire extinguisher during the firefighting drill required by parts 121 and 135. The discharge of halon for training purposes is not appropriate unless the air carrier uses a training facility that is specifically designed to prevent harm to the environment from the discharged halon. When such facilities are not used, other fire extinguishing agents, which are not damaging to the environment, should be used.

**D.** PBE training should include:

**1) Accurate simulation of PBE installed on the aircraft.** POIs and/or cabin safety inspectors (CSI), if applicable, should ensure that PBE used in training properly simulate the weight, method of donning, method of activation, and appearance of the actual PBE.

**2) Removing PBE from its stowage area and container/pouch.** F/As and pilots have been surprised by the forces necessary to remove PBE from the pouches used in training. The forces necessary to open the actual PBE storage units on aircraft was greater than the forces necessary to open the pouches used in training. Therefore, it is important that the pouches used to store the training PBE accurately replicate the actual forces necessary to open the storage units on aircraft. For example, if the PBE on the aircraft is kept in stapled pouches, which could require as much as 28 pounds of force to open, the forces necessary to open these pouches should be simulated when opening the “training pouch.”

**3) Donning the PBE, activating it, and other actions necessary to use the installed equipment.**

**E.** The nature and value of combating an actual fire.

**1)** Many people confuse meeting training objectives of fighting an actual fire with the psychological benefits that one can gain through experiencing an actual fire. The psychological effect of facing an actual fire cannot be achieved through simulation. The National Fire Protection Association’s (NFPA) Bulletin No. 406, Aircraft Hand Fire Extinguishers, states that live fire training provides crewmembers with psychological conditioning, firefighting techniques, and knowledge of extinguishing agent capabilities and limitations under actual fire situations. The bulletin also recommends that firefighting training with an actual fire be reinforced by classroom instruction using manipulative skills training (simulation). The recommended fire simulation scenarios include:

- Galley fires,
- Lavatory fires,
- Flight deck fires,
- Closed compartment fires, and
- Flammable liquid fires.

**2)** An actual fire means an ignited combustible material, in controlled conditions of a sufficient magnitude and duration to accomplish the training objectives set forth in the rule.

**3)** Industry practice shows that air carriers frequently contact local or airport fire departments. In some cases, fire department personnel are present during training. Many local fire departments provide training course outlines on the use of small, hand-held fire extinguishers, and they also typically provide training on the operation of hand-held fire extinguishers to employees of local businesses and organizations. Under fire department supervision, these employees are given the opportunity to extinguish an actual fire.

**4)** When creating actual fires, fire departments and air carriers often use, among other materials, kerosene or diesel fuel floating on water in a metal pan or drum. These fires are ignited outdoors in an open area. Some air carriers and fire departments have constructed indoor

fire rooms or fire pits in which they ignite materials such as seat cushions and use exhaust fans to eliminate smoke following the firefighting training.

#### **F. Simulation.**

1) A simulated fire is an artificial replication of a fire used to create the various firefighting situations that could occur on an aircraft. For example, electric lights that the instructor controls by turning them on and off to show that the crewmember has extinguished the fire correctly.

2) Smoke simulation is a component of the fire simulation described in the guidance material. Artificial smoke may be used to simulate smoke coming from a galley oven, under a lavatory door, or under a passenger seat.

**G.** Crewmembers would not necessarily use PBE every time there is a fire. Crewmembers should use PBE whenever they determine that dense smoke and/or fumes are present that do not permit effective firefighting at close range or when the fire is of unknown origin. There is some debate about crewmembers donning PBE when there is a fire on the ground and when an immediate evacuation is conducted. The most important variable in a successful evacuation is speed. If a crewmember is at a door, the need to don PBE may not be great unless the crewmember is going back into the cabin. Air carrier manuals and training programs should contain procedures indicating the proper use of PBE.

**H.** POIs and other inspectors have requested information about verification that a crewmember has accomplished the firefighting exercise in PBE drill with another air carrier. The regulation allows credit to be given toward the completion of the PBE drill including fighting an actual fire during an approved training program. This verification is accomplished by obtaining a written copy of official training records. The records should include the information that the crewmember accomplished the PBE/firefighting drill on a given date. This record should be accompanied by a signed copy of that portion of the approved training program that addresses the PBE/firefighting drill. Upon review of this information, inspectors should be able to verify that the crewmember has completed all parts of the PBE/firefighting drill, including fighting an actual fire. Unless documents clearly state that the crewmember fought an actual fire, the crewmember must perform the firefighting drill again.

### **3-1859 PROCEDURES AND TRAINING FOR POTENTIAL DECOMPRESSION EMERGENCIES.**

**A.** Accident investigators, inspectors, and crewmembers have reported that F/As failed to know and/or follow the FAA-recommended procedures during aircraft cabin decompressions. These procedures have been discussed with the industry during Civil Aerospace Medical Institute (CAMI) cabin safety workshops and are contained in FAA guidance material. With few exceptions, air carriers have adopted the FAA-recommended procedures.

**B.** The FAA-recommended procedures for F/As to follow during a decompression:

1) Immediately don the nearest oxygen mask.

- 2) Sit down or grasp a fixed object.
- 3) Hold on in order to brace against possible decompression forces until given clearance to move about the cabin by a flightcrew member.

C. These recommended F/A actions are based on CAMI research, which indicates that physical activity, such as that performed by a F/A, will significantly shorten the time of useful consciousness (TUC) during an aircraft decompression.

D. Certificate holders should have these procedures included in the appropriate manuals and incorporated in F/A training programs.

**3-1860 TRAINING ON OPERATION OF DC-10 DOORS.** On March 1, 1978, a DC-10 aircraft in scheduled passenger service aborted takeoff and departed the runway. The gear collapsed and in the subsequent fire the aircraft was destroyed. Two passengers were killed. On June 27, 1985, a DC-10 aircraft in scheduled passenger service aborted takeoff and departed the runway. Three passengers suffered serious injuries. During these accidents, crewmembers inadvertently opened doors with the slides disconnected.

A. The NTSB reviewed its investigations of accidents and incidents, including these two accidents, where information was available on F/A performance during emergency situations. The report, titled Flight Attendant Training and Performance During Emergency Situations, NTSB/SIR-92/02, resulted in recommendations to the FAA. They included recommendation A-92-78: "Amend the Federal aviation regulations to include ergonomic design requirements for cabin safety equipment, including emergency exits."

B. The arm/disarm lever and the door control handle on several aircraft types are adjacent to each other. Upward movement on the arm/disarm lever disarms the exit and upward movement on the door control handle opens the door. F/As do not normally have the opportunity to develop strong habit patterns associated with operating the door control handle. The doors are usually opened by ground service personnel from outside the airplane. However, F/As do develop strong habit patterns associated with the arm/disarm lever at the gates. For example, F/As use the arm/disarm lever to deactivate the slide in preparation for ground service personnel to open the door after arrival. Further, they use the arm/disarm lever to arm or activate the slide in preparation for movement on the surface. Emphasis should be placed on the proper operations of these types of doors, as improper operating procedures can result in inadvertent slide deployments and potential injury. Since the operating systems on some doors may be predisposed to human error, crewmember training should reinforce the correct actions associated with doors and their operating mechanisms.

C. The absence of reports of similar occurrences since 1985 indicates that air carriers have made effective adjustments in training on these types of doors. Nevertheless, during the training required by part 121 regarding opening the doors in the normal and emergency modes, air carriers should still emphasize the use of the arm/disarm and door control levers.

D. POIs and/or CSIs (if applicable) assigned to air carriers operating aircraft with this unique design should ensure that:

1) Their assigned certificate holders are aware of the possible problems with the operation of DC-10 and similar doors.

2) Adequate emphasis is placed on the operation of these doors during required training.

**3-1861 UNWARRANTED EVACUATIONS.** Reports concerning warranted and unwarranted emergency evacuations reveal that there is a need for improvement in procedures and training.

**A.** There have been several cases of passenger-initiated evacuations associated with the B-727 auxiliary power unit (APU) torching starts. Some of these evacuations present significant potential for injury to participants. The Boeing Commercial Airplane Group (BCAG) has released a videotape, *727 APU Torching*, and a Boeing Flight Operations Review Bulletin to all B-727 operators, which contain suggested air carrier actions to avoid APU torching incidents. (See Volume 3, Chapter 19, Section 5.)

**B.** Certificate holders should ensure their emergency evacuation procedures and training programs address the following:

1) Flightcrews and F/As are trained to recognize and act promptly in situations requiring an emergency evacuation.

2) F/As are trained to carry out an emergency evacuation on their own initiative in the event that the flightcrew is incapacitated or otherwise prevented from participating.

3) F/As are trained to recognize when evacuation equipment is inoperative or faulty, act promptly in preventing the use of such equipment, and quickly divert evacuating passengers to usable exits.

4) Flightcrew and F/A training emphasizes the ability to recognize the need to terminate an evacuation if conditions change and permit such action. F/As should be trained to immediately command passengers to stop the (unwarranted) passenger evacuation and immediately notify the flight deck of the situation. F/As should be made aware of the urgency to notify the flight deck so that the aircraft may be stopped, the engines shut down, the tower contacted (as necessary), etc.

5) Emergency alarm signal units, if installed in the cabin, are properly located and guarded to preclude inadvertent activation.

**C.** The FAA recommends that operators of B-727 aircraft:

1) Review their training programs and emergency evacuation procedures to assure that the flightcrew and F/As are aware that B-727 APU starts can result in a momentary orange flash from the vicinity of the APU exhaust near the right wing root.

2) Develop procedures that include an announcement from the flight deck before starting the APU on the B-727.

- 3) Include and emphasize this topic as part of their recurrent training programs.

**3-1862 EMERGENCY EVACUATION AND DITCHING DRILLS.** The NTSB investigated 46 evacuations of commercial aircraft that occurred between September 1997 and June 1999. These evacuations involved 2,651 passengers and 18 different aircraft types. The study, Emergency Evacuation of Commercial Airplanes, NTSB/SS-00/01, can be obtained online at [www.nts.gov/Publictn/A\\_Stu.htm](http://www.nts.gov/Publictn/A_Stu.htm). The NTSB investigation resulted in recommendations to the FAA, including recommendation A-00-85: "Require air carriers to conduct periodic joint evacuation exercises involving flightcrews and flight attendants."

**A.** This investigation revealed a potential problem regarding crew performance during aircraft evacuations. In some cases, crew coordination was not as good as it could have been. Since many of the aspects of ditching are the same as an evacuation, the NTSB recommended that flightcrew members and F/As perform the required aircraft evacuation and ditching drills together.

**B.** Giving crewmembers the opportunity to experience crew coordination and teamwork during required training drills is highly desirable. This is not always possible because of the difference in the number, domicile location, and scheduling of F/As and flightcrew members. Nevertheless, air carriers have used a variety of methods to ensure that crewmembers understand the procedures and actions of each other during emergency situations. These methods have included the use of videos that show the actions of crewmembers during a simulated emergency situation. The simulation is especially helpful when followed by a discussion in which crewmembers are encouraged to discuss the role of fellow crewmembers.

**C.** Certificate holders should be aware of the desirability of flightcrew and F/As performing emergency evacuation and ditching drills together. Further, certificate holders should be aware that when this is not possible, training programs should address the roles of other crewmembers during an emergency evacuation and/or ditching.

### **3-1863 GUIDELINES FOR CREWMEMBER TRAINING ON AIRCRAFT TAILCONES AND APPROVAL OF TAILCONE TRAINING DEVICES.**

**A. Background.** On February 19, 1996, a DC-9-32 landed wheels-up. The airplane slid 6,850 feet before coming to rest in the grass about 140 feet left of the runway centerline. The cabin began to fill with smoke and the captain ordered the evacuation of the airplane. There were 82 passengers, 2 flightcrew members, and 3 F/As aboard the airplane. The NTSB investigation resulted in recommendations to the FAA, including recommendation A-97-10: "Amend Flight Standards Handbook Bulletin 96-02, Guidelines for Crewmember Training on Aircraft Tailcones and Approval of Tailcone Training Devices, to include a requirement that if any portion of a restraint system is attached to the tailcone access plug door in the aircraft that might interfere with the opening of the door, the plug door training device must be equipped with the entire restraint system." The report is available online at [www.nts.gov/Recs/letters/letters.htm](http://www.nts.gov/Recs/letters/letters.htm).

1) Section 121.417 requires that each crewmember, during initial training and every 24 months, operate each type of emergency exit in the normal and emergency modes. This

demonstration must include the actions and forces required in the opening of all exits including tailcones.

2) In addition, the NTSB determined that during the accident referenced above the F/A seated on the aft jump seat was unable to completely remove the tailcone access plug door because one of the aft jump seat shoulder harness straps was buckled to the lap belt, which tied the plug door to the aft bulkhead. Fortunately, the lack of availability of the tailcone exit did not preclude a timely and successful evacuation.

3) Further, NTSB safety recommendation A-97-10 requested that Flight Standards (AFS) amend Order 8400.10 to include a requirement that if any portion of a restraint system is attached to the tailcone access plug door in the aircraft that might interfere with the opening of the door, the plug door training device must be equipped with the entire restraint system. When the NTSB investigators examined the DC-9 plug door training device at the air carrier's F/A training facility, they found that seatbelts and shoulder harnesses were not installed in the trainer. Therefore, it was not possible for F/As to train for the removal of the plug door with the shoulder harness straps buckled to the seatbelt and gain hands-on experience with the problem this creates.

4) In addition, the air carrier's F/A manual, current at the time of the accident, did not mention the need to ensure that the jump seat shoulder harness straps are unbuckled from the lap belts before attempting to remove the plug door. The NTSB concludes that the F/As received inadequate information and training on the operation of the DC-9 tailcone access plug door.

5) Service Bulletin (SB) 53-257 required a modification to the assembly release handle, which resulted in a change to F/A evacuation procedures of the tailcone. A forward tailcone assembly release handle was installed and is located immediately to the F/A's right-hand side (aircraft left) when opening the pressure bulkhead or plug hatch. Once the pressure bulkhead or plug hatch has been opened from inside the cabin, the F/A will pull the forward tailcone release handle located at the forward end of the catwalk (aircraft left) to jettison the tailcone and trigger slide inflation. If the tailcone jettisons and the slide inflates, the F/A may conduct the evacuation at the end of the catwalk. If the tailcone fails to jettison, the F/A must redirect the passengers to other usable exits.. If passengers are unable to use other exits for evacuation, the F/A may use the aft tailcone release handle, but this is only as a last resort.

**B. Tailcone Training Device.** Any tailcone training device should meet the following criteria:

1) The training device should replicate the dimension of the physical space a person must occupy to operate the mechanism for opening the tailcone. It shall provide simulation of all obstacles that hinder free movement such as overhanging bulkheads, intruding cables, etc. The various locations of the tailcone release handle for different models of the same aircraft shall be covered in differences training. Either the use of pictorial or audiovisual training aids, or a visual inspection of the aircraft, is an acceptable training method for these differences.

2) The ventral or plug door training device simulating the door at the pressure bulkhead leading to the tailcone should approximate the size and shape of the door on the actual

aircraft. A door training device should approximate, within 10 percent, the weight of the actual door. If any portion of a restraint system is attached to the tailcone access plug door or any other exit in the aircraft that might interfere with the opening of the door, the door/plug/tailcone training device must be equipped with the entire restraint system. Crewmembers shall be trained to know what to do if the restraint system interferes with the opening of the door.

3) The operation of the ventral or plug door handle or other mechanism used to activate the door should look and operate in the tailcone training device exactly as it does on the aircraft. Other hardware, such as door hinges, should approximate the hardware in respect to size and shape. In addition, forces required to operate the manual release handle should be the same as those on the aircraft.

4) The walkway or catwalk leading from the pressure bulkhead to the tailcone should approximate the actual width and length of the aircraft. If the trainer walkway differs by 10 percent or more from the dimensions of the actual aircraft, then training on the differences should provide information regarding this fact. This can be accomplished through pictorial or audiovisual training aids. The FAA strongly recommends pointing out this difference during a visual inspection of the actual aircraft.

5) The emergency lighting available in the tailcone area of certain types of aircraft provides a low level of illumination. During crewmember training, the illumination of the tailcone training device should be maintained at a comparable low level.

6) It is essential to maintain a training device in the same condition in which it was originally approved by the FAA. POIs and/or CSIs (if applicable) should ensure that the air carrier's training program provides the name of the person responsible for training device integrity. A person specifically assigned to maintain training devices or a training instructor supervisor may have that responsibility. In addition, POIs and/or CSIs (if applicable) should ensure that air carriers test the accuracy of the operating forces of manual release handles on tailcone and ventral door training devices. Such testing should be performed and logged on a yearly basis.

**C. Aircraft Familiarization Tours.** An air carrier may use a tailcone exit training device of such high fidelity and/ or conduct differences training using pictorial or audiovisual aids of such quality that no further training benefit would result from a familiarization tour of the aircraft. In such cases, the POI and/or CSI (if applicable) may permit the air carrier to meet the entire training requirement of a particular aircraft without using the actual aircraft.

1) Air carriers that have a ventral (or plug) door training device, but not a tailcone training device, must conduct an aircraft familiarization tour of the tailcone area for initial and recurrent training. Each trainee will walk through the tailcone area. Instructors will ensure trainees are aware of the placement of the tailcone manual release handle on the aircraft and, as appropriate, other variant aircraft. When the air carrier has a method to operate the tailcone release handle without actually deploying the tailcone, then each trainee should operate the tailcone release handle. When the operation of the tailcone release handle releases the tailcone, then either the instructor or a trainee should operate the tailcone release handle while the other

trainees observe. The instructor should ensure that each trainee understands the operation of the tailcone manual release handles.

2) Air carriers that have neither a tailcone training device nor a door training device will conduct an aircraft familiarization tour as described in subparagraph 3-1863C1). In addition, for air carriers not possessing a door training device, instructors must conduct plug and/or ventral door training using an actual aircraft. Instructors will ensure that each trainee operates the plug and/or ventral door and each trainee operates all handles, switches, knobs, or other mechanisms necessary to ready the equipment for emergency evacuation. Air carriers may not want to drop the tailcone mechanism; however, the air carriers may wish to “catch the tailcone” so that it does not fall. Or the air carrier might ensure each trainee operates the mechanism that drops the tailcone that is installed in a simulated device. Regardless of the method used each trainee must actually operate the appropriate mechanisms to ensure evacuation through the tailcone exit.

**3-1864 USE OF MOCKUPS IN CREWMEMBER EMERGENCY TRAINING.** Mockups provide realism during training in emergency situations. Cabin mockups and cabin door training devices are part of FAA-approved training programs for F/As. The POI assigned to a certificate holder is responsible for the approval of these training devices. Approval of a training device(s) is concurrent with approval of the entire training program. The device is only one part of any training program.

A. The following provides guidance for approval of training devices:

1) The POI and/or CSI (if applicable) should review the procedures contained in any training module that incorporates the use of a training device(s). The training device must realistically simulate the exit that it represents.

2) Whenever possible, before the onsite inspection of the device, the POI and/or CSI (if applicable) should operate the actual aircraft exit represented by the device. By opening the actual door in the normal mode, the inspector will be able to determine the force needed to operate the device. Additional information regarding the normal forces may be obtained from the aircraft manufacturer. The normal forces needed to open any given type of door may have a wide range. In some cases, the range could be as much as 20 pounds. POIs and/or CSIs (if applicable) should experience the forces using an actual door to determine what the opening of the door “feels like.” In the case of tailcone devices, the inspector should perform a walk-through in order to become familiar with its dimensions.

B. During the onsite inspection of the training device, the POI and/or CSI (if applicable) should ensure that the device:

1) Accurately represents the position and operation of the handles and hardware of the actual aircraft door,

2) Simulates both the normal and emergency modes,

3) Incorporates the actions required to operate the exit in the same manner as the actual door in both the normal and emergency modes of operation,

- 4) Requires representative forces to open the door in the emergency mode, and
- 5) Is equipped with a manual inflation handle, if applicable. The training program should address the fact that the inflation handle may not always be in the same location on similar aircraft.

**C.** During the onsite inspection and using the air carrier's procedures, the POI and/or CSI (if applicable) should have a qualified instructor demonstrate the operation of the device in the normal and emergency modes.

**D.** The POI and/or CSI (if applicable) should then operate the training device in the normal and emergency modes, using the provided instruction, to determine that the device and the training provide realistic simulation of the corresponding exit.

**E.** The POI and/or CSI (if applicable) should ensure that the air carrier has an established maintenance program for training devices. This program should ensure that each device maintains the appearance, functions, and forces existing during original approval. The FAA-approved training program should list by name and title the person responsible for the maintenance of each training device.

**F.** Exit differences should be highlighted in the training program whenever a single training device is used to represent more than one exit. Examples include differences between Type I, Type A, and Type III exits or in size and appearance among similarly operating exits. Other training aids may include, but are not limited to:

- Aircraft study guides,
- Videotape presentations,
- Slide presentations, and
- Aircraft familiarization walkaround.

**G.** Whenever the motions needed to operate an emergency exit training device are different from those actually required on the aircraft, the training requirements must be met by using another true-to-life training device or the aircraft itself. The following are examples:

- The different methods of operation for the 2L/2R and 3L/3R doors on the A-321 such as the 4–6 second delay between activation of the opening mechanism and full opening of the aircraft door and the different procedures regarding the use, as well as the actual placement, of the manual inflation handle; and
- The differences between any aircraft trainer and the actual aircraft with a tailcone exit, such as the B-717, including a tailcone environment that accurately represents the equipment and the environment on the airplane to ensure that F/As are able to use proper door opening technique, proper use of assist space, and proper methods to manually deploy and activate the emergency slide.

### **3-1865 CREWMEMBER SURVIVAL TRAINING.**

**A.** Aircraft accidents illustrate the importance of having crewmembers trained in survival techniques so that they may be able to assist passengers in surviving severe environmental conditions following an accident. The NTSB recommended that certain regulatory amendments be made to require each certificate holder to provide survival training for its crewmembers. This survival training would include instruction in survival techniques at sea, in desert areas, in mountainous regions, and in winter conditions.

**B.** Parts 121 and 135 require each certificate holder to provide emergency training for its crewmembers.

1) These training requirements include:

- Training in the operation of emergency equipment;
- The proper use of first aid equipment; and
- Instruction in handling illness, injury, or other abnormal situations involving passengers or crewmembers.

2) Since much of the training recommended by the NTSB is currently being given to crewmembers, the FAA believes that any additional training needed in this area can be provided to crewmembers during their normal recurrent training periods. The air carrier needs only to add the training appropriate to the climatic conditions and geographic area associated with the air carrier's route structure not presently in the crewmember's training program.

NOTE: The training listed need not be repeated if that type of training was previously accomplished during another phase of training. POIs and/or CSIs (if applicable) should ensure that their assigned certificate holders accomplish survival training, as appropriate, for that air carrier's areas of operation.

**3-1866 CREWMEMBER INDOCTRINATION TRAINING AND REDUCTION OF PROGRAMMED HOURS.** The Flight Standards Service (AFS) has reviewed the flightcrew member and F/A training curricula of major air carriers. This review of FAA-required crewmember indoctrination course curricula showed that some curricula included material not pertinent to 14 CFR, to flight conduct, or to aviation safety. It also highlighted the importance of managing the reduction of programmed hours during labor disputes.

#### **A. Indoctrination Training.**

1) It is important that the required 40 programmed hours of indoctrination training contain only subjects that are pertinent to the safety assignments of crewmembers. Specifically, indoctrination training should include the following:

- Duties and responsibilities of crewmembers,
- Appropriate provisions of 14 CFR, and
- Contents of the certificate holder's operating certificate and operations specifications (OpSpecs).

2) Any review of these requirements should ensure that subjects are related to the safety responsibilities of the crewmembers. Subject areas such as company history, company organization, and scheduling may be credited toward programmed hours if they show a direct relationship to 14 CFR, to flight operations, or to flight safety. Employee compensation/benefits and contracts, grooming, uniform regulations, pass benefits, and other similar subjects are not appropriate in the 40 programmed hours of FAA-approved indoctrination training.

**B. Curriculum Subjects.** Subjects such as company organization and description should be changed to company organization and operating philosophy as it relates to the way the company controls its flight operations and the crewmembers' role in those operations. An example is provided by the subject of general forms, records, and administrative procedures. This subject should be part of the 40 hours of indoctrination training only if the records are related to the operation of the flight. For example, mechanical discrepancy forms would be related to the operation of the flight and could be included in the course. Employee standards and rules of conduct should be part of the 40 programmed hours only as this discussion relates to safety.

**C. Daily Training Hours.** To ensure that students have adequate time to assimilate subject material, attend to personal needs, and receive adequate rest, the daily hours of training activity should be limited to 10 consecutive hours in any 24-hour period. Each hour of training normally contains a reasonable "break time" of 10 minutes. Lunch hour, or other extended breaks, may not be considered as part of programmed hours.

**D. Reduction of Training Hours.** Many air carrier training program indoctrination courses may be reduced if the subject matter can be covered more effectively in accordance with § 121.405. (Section 121.405 states, in part, that the Administrator should consider the training aids, devices, methods, and procedures listed in the certificate holder's curriculum as stipulated in § 121.403 that increase the quality and effectiveness of the teaching/learning process.) However, the programmed hours for indoctrination training should not be reduced below 32 hours. These 32 hours should contain subjects listed in 14 CFR and follow the policy as outlined above.

**E. Revisions After Final Approval.** In accordance with § 121.405(e), the FAA may require revisions, including additional hours, to a training program that has been granted final approval. POIs and/or CSIs (if applicable) should work with their assigned certificate holders to identify any areas, including number of programmed hours, that need to be changed and to obtain a firm schedule for the completion of these changes.

**F.** Credit should be given regarding only those subjects that are easily transferred from one air carrier to another. Typically, this would include knowledge of 14 CFR, but very little else. Additional credit could be given for the quality of the training, including instructor-to-student ratio, teaching aids, size of class, and other factors, as listed in §§ 121.401(d) and 121.405(d). Subjects covered in indoctrination training shall pertain to the safety duties of all crewmembers.

**G.** POIs and/or CSIs (if applicable) should be aware of the national attention usually focused on an air carrier during a period of labor unrest, bankruptcy, or other newsworthy

periods of stress for the air carrier. FAA approval for changes during these periods may give the impression of bias toward the air carrier. Therefore, any such credit or reduction in training programs should be coordinated with the Air Transportation Division (AFS-200). See Volume 6, Chapter 2, Section 18 for more information on air carriers experiencing significant change.

**H.** POIs and/or CSIs (if applicable) should recommend that their assigned certificate holders' crewmember (both flightcrew and F/As) indoctrination training includes the following:

- Only appropriate subjects during the credited programmed hours, and
- At least 32 programmed hours, even if hours were reduced in accordance with the standard specified in § 121.405(d).

NOTE: Any special training program adjustments that may be considered for approval during a labor dispute are to be brought to the attention of the AFS-200 before initial or final approval is granted.

### **3-1867 GUIDELINES FOR EVALUATING HOME STUDY AS A SUBSTITUTE FOR CLASSROOM GROUND TRAINING.**

**A.** Since the primary focus of aviation safety is the prevention of accidents, a well-trained crew is essential. Home study has a legitimate place in crew training.

1) Some air carriers request that POIs approve substitutions of home study modules for some classroom training modules. This paragraph provides information to assist POIs and/or CSIs (if applicable) as they respond to these requests.

2) Home study is one alternative to traditional classroom instruction. Quantifiable baseline standards for knowledge must first be developed and evaluated. Home study and evaluation methods must meet or exceed the established baseline standards.

#### **B. Definition.**

1) Home study may refer to a range of activities, from reading a book to using the newest computerized multimedia program. Home study may occur anywhere adequate facilities and equipment are available, in any setting conducive to learning. Terms such as individualized instruction, student-centered learning, prescriptive learning, self-directed learning, even computer-based training, are often considered synonymous with home study.

2) Home study is defined here as a process in which a trainee works at his or her own pace, without the aid of an instructor, to master specified material. Decisions about what material needs to be learned or when the training will be available are made by others, not the trainee.

#### **C. Discussion.**

1) Any request will be submitted in writing and include justification for the substitution as well as an implementation and evaluation plan. All training materials and study

materials, in order to include training objectives and examinations, will be provided with the request.

2) The air carrier's program must include procedures to collect data related to the home study module for the purposes of verifying home study effectiveness. Records must identify the test version taken as well as documentation of student responses. This is a procedural administrative record that is kept during the grading period. Other evaluation data documenting that the home study module is as effective as the air carrier's previously used classroom training module must also be presented to the POI and/or CSI (if applicable).

3) When a request is received from an air carrier, the POI and/or CSI (if applicable) will observe the classroom module(s) for which the air carrier has requested a home study substitution. The purpose of this observation is to determine both the quality and quantity of the current training. Based on personal observations and training materials, the inspector can more accurately ensure that the proposed home study will effectively duplicate the classroom training, which it will replace.

4) No substitutions will be considered for basic indoctrination, initial, or transition ground training. Requests for substitutions to recurrent and requalification ground training will be considered.

5) Only cognitive or knowledge-based training is eligible for consideration for home study.

6) No more than 50 percent, not to exceed 8 hours of the air carrier's approved training program's ground training hours, can be initially accomplished through home study. After the home study module has been in place for a period of 24 months, the air carrier may request additional hours of home study, not to exceed 50 percent of the required ground training. The air carrier is responsible for providing valid written justification, using data based on student records and training evaluations, for the home study for additional credit. POIs and/or CSIs (if applicable) will take into consideration presently approved classroom content and training hours when evaluating an air carrier's home study request.

a) Example one: An air carrier makes a home study substitution request for 50 percent of the 18 hours of ground training. This request cannot be approved. Fifty percent of the 18 hours of ground training is 9 hours and exceeds the 8 hour maximum substitution rate. In this case, a maximum of 8 hours may be offered through home study.

b) Example two: An air carrier conducts ground training that is 8 hours in length and requests that the entire program be conducted via home study. This request cannot be granted for the entire 8 hours. In this case, only 50 percent or 4 hours of home study training may be approved.

7) Proctored and other POI-approved testing methods are required. Examinations are required to document the acquisition of the knowledge presented through the home study module. These examinations must be valid and reliable as well as monitored and graded by someone other than the student. When testing is computer generated, administered, and graded, the computer-managed instructional testing program will immediately provide students with

correct responses to all incorrectly answered items. A combination of multiple choice, fill-in-the-blank, short answer, essay, and matching test items is acceptable. True/false questions are discouraged. No take home examinations may be used.

8) The air carrier's program must have procedures for collecting training data to include identifiable student results and test scores, a variety of tests, and direct feedback to the student on incorrect test responses. POIs and/or CSIs (if applicable) may require the air carrier to provide additional data to ensure that the overall quality of the air carrier's training program is maintained.

9) When the testing is computer generated and administered, correct responses for incorrect test responses must immediately be provided by the computer testing program. This feedback must include corrections of any misconceptions that the student may have acquired during home study.

10) Hazardous material (hazmat) training requests for a home study module must be coordinated with the regional hazmat branch manager.

11) This information does not apply to Advanced Qualification Program (AQP) applicants or participants.

**3-1868 TRAINING, QUALIFICATIONS, AND OPERATIONAL CONTROL OF F/As WHO HAVE SERVED OR MAY BE SERVING AT MORE THAN ONE AIR CARRIER.**

This paragraph provides information regarding the approval of F/A training programs and other procedures for F/As who have had experience with another air carrier or are presently employed by another air carrier.

A. There are no explicit regulatory provisions for one air carrier to credit training previously conducted by another air carrier. In the past, certain certificated air carriers have requested credit toward the number of programmed hours of F/A training based on the fact that F/As had already served with another air carrier. This practice is no longer acceptable.

B. Learning interference is increased when the F/As are assigned to duties on one type of airplane that is operated differently by two or more air carriers. Therefore, in some cases, it is possible that F/As experienced with one air carrier may actually need more training instead of less.

C. The F/As used by an air carrier should all complete the same training program. This training program should be sufficient for F/As to be fully qualified to operate on the aircraft for which they are to serve as an F/A in that certificated air carrier's part 121 operation. Additional training may be needed for reasons such as:

- 1) Qualification on another aircraft;
- 2) Qualification to operate in extended overwater operations;
- 3) Additional security training; and

4) Equipment differences.

D. POIs should not approve any F/A training programs or reductions in programmed hours to F/A training programs that differ from the F/A training program and programmed hours that are currently used for new hire F/As.

E. Certificated air carriers conducting operations under part 121 should have only one approved F/A training program for all F/As who will be used by air carriers holding certificates under part 121.

F. POIs and/or CSIs (if applicable) assigned to certificate holders operating under part 121 should ensure:

1) That their assigned certificate holders have one FAA-approved training program which all new F/As (regardless of experience level or present state of employment) complete before they serve as crewmembers in that air carrier's operations.

2) That additional training is provided if the POI and/or CSI (if applicable) finds it is necessary for F/As who have experience with another air carrier to receive additional training to satisfy the performance of their assigned duties.

3) That indoctrination training for F/As should contain 40 hours of training, which can be reduced to not less than 32 hours if the Administrator finds the required subject areas are adequately covered. The subjects covered should be related to safety and not include such areas as company history and company organization. Credit for programmed hours will show a direct relationship to 14 CFR, to flight operations, or to flight safety. Employee compensation/benefits and contracts, grooming, uniform dress codes, pass benefits, and other similar subjects are not appropriate for training credit toward the 40 programmed hours of FAA-approved indoctrination training.

4) That the air carrier, the pilot in command (PIC), and the F/As understand that the F/As, including those employed by another air carrier, are under the operational control of the certificated air carrier and the authority of the PIC if they are used as crewmembers in that certificated air carrier's operations conducted under part 121.

5) That all F/As, including those employed by someone other than the air carrier, use only the procedures that are contained in the air carrier's FAA accepted F/A manual.

**3-1869 EVACUATION SLIDE DRILL.** This paragraph addresses the application of § 121.417(c)(1)(iii). This regulation requires crewmembers to perform a one-time emergency evacuation drill with each person egressing the airplane or approved training device using at least one type of installed emergency evacuation slide. This regulation does not apply to airplanes that are not equipped with slides. This pertinent subparagraph (§ 121.417(c)(1)(iii)) affords crewmembers experience with evacuation slides on those airplanes for which evacuation slides are required. Section 121.417(c)(1)(iii) does not apply to those airplanes for which evacuation slides are not required.

**3-1870 APPROVAL OF F/A TRAINING PROGRAMS AND ACCEPTANCE OF F/A**

**MANUALS.** On June 8, 1995, a DC-9-32 was operated as a scheduled, domestic passenger flight under the provision of part 121. The flight was cleared for takeoff on runway 27R. Five crewmembers and 57 passengers were onboard. As the airplane began its takeoff roll, the airplane occupants and air traffic control (ATC) personnel heard a “loud bang.” The right engine fire warning light illuminated, the flightcrew of the following airplane reported to the crew that the right engine was on fire, and the takeoff was rejected. Shrapnel from the right engine penetrated the fuselage and the right main fuel line, and a cabin fire erupted. The airplane was stopped on the runway, and the captain ordered the evacuation of the airplane.

**A.** The F/A seated in the aft F/A jump seat received serious puncture wounds from shrapnel and thermal injuries. Another F/A and five passengers received minor injuries. The pilots, the third F/A, and 52 passengers were not injured. The airplane’s fuselage was destroyed.

**B.** The NTSB investigation of this accident resulted in recommendations to the FAA. These recommendations included A-96-83: “Emphasize to principal operations inspectors the importance of thoroughly reviewing flight attendant training programs before approving them and flight attendant manuals before accepting them.”

**C.** The NTSB’s investigation disclosed deficiencies in F/A training, including emergency drill training. Specifically, the training syllabus did not include hands-on operation of a tailcone release handle. While this and other deficiencies were subsequently addressed by the air carrier, the NTSB believes that the FAA should emphasize the importance of thoroughly reviewing F/A training programs before approving them, and manuals before accepting them.

**D.** POIs and/or CSIs should use the guidance provided in Volume 3, Chapter 23, Section 2 in approving training programs and accepting manuals. The job aid for F/A training, conducted under part 121, found in Volume 3, Chapter 23, Section 2, should be especially helpful in approving or checking F/A training programs. In addition, the job aid, Preparation of Flight Attendant Manual, found in Volume 3, Chapter 32, Section 13, provides guidance to inspectors accepting or checking F/A manuals.

**E.** The FAA emphasizes to POIs and/or CSIs (if applicable) the importance of thoroughly reviewing F/A training programs before approving them and F/A manuals before accepting them.

**3-1871 NEED FOR F/As TO BE AGGRESSIVE IN INITIATING AIRCRAFT**

**EVACUATIONS.** At about 1638 eastern daylight time, on October 19, 1996, an MD-88 struck the approach light structure at the end of the runway during an approach. The airplane sustained substantial damage to the lower fuselage, wings, main landing gear, and both engines. There were 58 passengers and 3 F/As onboard. Three passengers reported minor injuries. The NTSB investigation resulted in recommendations to the FAA. They included recommendation A-97-95: “Require all 14 CFR part 121 and 135 operators to review their F/A training programs and emphasize the need for flight attendants to aggressively initiate their evacuation procedures when an evacuation order has been given.” The report is available online at [www.nts.gov/Recs/letters/letters.htm](http://www.nts.gov/Recs/letters/letters.htm).

**A.** In general, the NTSB considers the crewmembers' responses after the airplane came to a stop as commensurate with the circumstances of this accident. First, the crewmembers assessed the condition of the airplane and reviewed their options. The captain was then informed of jet fuel fumes in the passenger cabin, at which point he promptly ordered an emergency evacuation. The NTSB concluded that the flightcrew coordination appeared adequate, and the decision to evacuate the airplane was appropriate and timely. Furthermore, the NTSB concluded that the F/A in charge reacted to the evacuation command promptly and assertively, in accordance with the air carrier's F/A manuals and training. All passengers were successfully evacuated through the L-1 door, with minimal evacuation-related injuries. Although under other circumstances, the NTSB believes that the decision to use only one exit might have had critical, negative consequences, in this case the decision to use only the L-1 door had favorable results.

**B.** The flight deck voice recorder transcript indicated that during the evacuation, two F/As remained in the aft cabin on the interphone trying to obtain additional evacuation instructions at least 38 seconds after the captain issued the evacuation order. About 40 seconds after the evacuation was commanded, the first officer (who had been assisting with the evacuation at the L-1 door) responded on the interphone to the aft F/As' inquiry, with instructions to evacuate "forward." The aft F/As began to participate in the evacuation. The airplane was carrying a light passenger load, with most of the passengers seated in the front half of the cabin. By the time the aft F/As began evacuation actions, most of the passengers had exited or moved toward the first-class cabin area.

**C.** The aft F/As stated that they sought further instructions before taking action because they were concerned that the damage to the airplane and the possibility of spilled fuel might affect the usability of their exits. According to the guidance contained in the F/A manual, when an evacuation is ordered, F/As should promptly assess the condition of their assigned exits, activate exits as appropriate, and issue guidance to passengers. The manual further states that if a F/A judges that his or her assigned exit is not usable, the F/A should redirect passengers towards an appropriate exit. The NTSB notes that it was appropriate for the aft F/As to evaluate and make a decision regarding the usability of their exits. However, a 38-second delay before beginning evacuation actions might have had adverse results under more hazardous conditions (e.g., fire).

**D.** The F/A manual also indicates that once an evacuation is ordered, F/As should begin the evacuation promptly, and "without further communication from the cockpit." The NTSB concluded that the two aft F/As did not react promptly or demonstrate assertive leadership, as specified in their F/A manuals and training. Therefore, the NTSB believes that the FAA should require air carriers to review their F/A training programs and emphasize the need for F/As to aggressively initiate their evacuation procedures when an evacuation order has been given.

**3-1872 NTSB RECOMMENDATIONS FROM THE TOWER AIR ACCIDENT.** On December 20, 1995, at 1136 eastern standard time, a Boeing 747-136, N605FF, sustained substantial damage during a rejected takeoff at John F. Kennedy International Airport, Jamaica, New York. There were 23 minor injuries and 1 serious injury among the 15 crewmembers, 462 passengers, and 6 lap children onboard. Instrument meteorological conditions (IMC) including blowing and drifting snow prevailed, and an instrument flight rules (IFR) plan had been filed. This flight was being conducted under the provisions of part 121 as a domestic, scheduled passenger/cargo flight. The subsequent NTSB investigation of this accident resulted in the

recommendations in subparagraphs 3-1872A through D. Subparagraph 3-1872E contains F/A narrative accounts of the accident. Subparagraph 3-1872F is a discussion of the galley equipment.

**A. NTSB Recommendation A-96-140.**

**1) Background.** According to the NTSB report accompanying this recommendation, during a recent aircraft evacuation, passengers were instructed to remove their shoes. Therefore, the NTSB issued recommendation A-96-140, asking the FAA to develop a uniform policy regarding the wearing or not wearing of shoes during an aircraft evacuation. Many safety experts believe that shoes provide protection from debris and fuel following an accident and that shoes should be worn during an aircraft evacuation. The only problem with shoes appears to be the wearing of high-heeled shoes down the slide. It is unlikely they could damage a slide; however, that possibility does exist. There is the more likely possibility that high heels could hit another person or could become wedged in various places, thus resulting in injury.

**2) FAA Policy.** The FAA believes that the proper procedure regarding shoes during an aircraft evacuation is to leave them on. In the case of a forewarned evacuation it is desirable to remove high-heeled shoes and stow them in an approved stowage area such as an overhead bin. They should not be placed in the seat pocket.

**B. NTSB Recommendation A-96-156.**

**1) Background.** During a recent NTSB accident investigation regarding a B-747, the NTSB report states that the NTSB determined that only 3 of the 12 F/As shouted the appropriate commands as soon as the impact sequence started. However, several of the F/As acknowledged seeing or hearing things not associated with normal operations, such as crunching and tearing noises, engine separation, and significant spillage of carry-on baggage during the airplane's off-runway excursion. The NTSB recognized that in the large cabin of a B-747, not all F/As had access to the same information about the event; therefore, F/As might have formed different opinions about the gravity of the situation. However, the Safety Board concludes that during this accident sequence, despite some ambiguity about the situation, there were ample indications in most parts of the passenger cabin to have caused a greater number of F/As to shout brace commands before the airplane came to a stop.

**2) FAA Policy.** F/As should be trained to give brace-for-impact instructions to passengers when they first suspect there is a problem that could lead to impact and/or aircraft evacuation. This training should be included in evacuation drills, door operations drills, and in classroom discussions.

**C. NTSB Recommendation A-96-157.**

**1) Background.** According to the NTSB report accompanying this recommendation, during the investigation of a recent accident, the NTSB determined that there was a lack of communication and coordination, which was evidenced by an inconsistent pattern of the F/A's emergency commands before the airplane came to a stop. The large cabin layout of the B-747, and the large size of its cabin was an issue in the cabin crew's communication, coordination, and actions immediately after the airplane came to a stop. While the decision not to evacuate the

airplane (made independently by the F/As and the flightcrew) may have been appropriate, these decisions were made without adequate knowledge of the post accident condition of the airplane. The F/As had vital information that they did not relay to the purser or the flightcrew. For example, F/As did not provide information to the flightcrew about the separation of the No. 4 engine, the severe floor disruption in the forward cabin, the smell of smoke and kerosene in the cabin, or the condition of the injured F/A.

a) Normally, the public address (PA) and interphone systems provide effective means of communications among F/As, and between the cabin and flight deck. In this accident, the purser was unaware that his PA announcements were only audible in the forward cabin, and thus passengers and F/As in the rear of the airplane did not receive any information about the decisions not to evacuate. Further, the purser and three F/As did not use megaphones as an alternative to these communication systems. The deadheading F/A went forward in the cabin to find out what was planned, but he did not return to the aft cabin to share the information with the other F/As.

b) The NTSB's review of F/A procedures revealed that no backup procedures had been established for communicating or assessing conditions in the post-accident contingency of inoperative or unpowered PA and interphone systems. However, the likelihood of impact damage to PA and interphone equipment, as demonstrated in this accident, indicated that such backup procedures are essential.

c) The NTSB concluded that existing F/A procedures provided inadequate guidance to F/As on how to communicate and to coordinate their actions during and after the impact sequence.

**2) FAA Policy.** Section 121.417 requires crewmember training on emergency equipment, including megaphones. Therefore, when crewmembers receive training conducted as part of this requirement, they should be trained on the location, function, and operation of emergency equipment, including the megaphone. In addition, crewmembers should be trained to follow specified procedures in the event that the PA system or the interphone does not work. This is especially important in large airplanes where crewmembers may need to communicate with each other without the aid of the interphone. In addition, § 121.417 requires training on crew communication and coordination during emergencies. Both emergency training and indoctrination training should include training on individual crewmember responsibilities. The individual responsibilities for F/As must be listed in the appropriate parts of the required F/A manual. Failure to include a list of the duties and responsibilities of each crewmember could be a violation of § 121.135(b)(2).

#### **D. NTSB Recommendation A-96-158.**

**1) Background.** According to the NTSB report accompanying this recommendation, "the NTSB concluded that the circumstances of this accident imply that F/As (particularly those assigned to wide-body aircraft) would benefit from the opportunity to practice communications procedures and coordination skills. CRM training can provide this opportunity." In addition, the NTSB decided that the "communication and coordination issues raised by this accident, both

among F/As and between F/As and flightcrew would be appropriate to be addressed in joint CRM training by providing experience and practice in a realistic, line-oriented setting.”

**2) FAA Policy.** Section 121.417 stipulates that a review of previous accidents and incidents should be part of the emergency training conducted under this part. The Tower Air accident that is referenced in this paragraph is a good example of the type of accident that could be used in ground emergency training and/or Crew Resource Management (CRM) training.

**E. F/A Interviews.** The following are the narrative accounts of the accident from each of the F/As. None of the F/As reported using any of the emergency equipment stored in the cabin.

**1) F/A/Purser Seated at 1L.** He was an assistant purser who was working the purser position because there was no purser on the crew.

a) He described the takeoff roll as “it felt like you weren’t going fast,” and then the airplane was “sliding a bit.” The “captain put on the brakes” and the “rumbling” felt like they were going over potholes. He saw the top drawer of the ice module come out of the galley and fall on the floor. (There was no “lever” above the ice cart in the galley.) When the airplane stopped he looked out the window and saw snow. He called the cockpit on the interphone but there was no answer. (He heard the interphone tone when he called.) He saw the disruption of the floor and he noted that some passengers in the A Zone were crying.

b) He ran upstairs to the cockpit and asked the captain what was going on. The captain said there was no indication of fire or danger and to keep the passengers in their seats. The captain also said something about keeping the passengers out of the weather. The captain told him that emergency personnel would come to the 1L door. He did not tell the captain anything about the condition of the cabin. He stated that a “retired FAA guy” was an observer in the cockpit.

c) The upper deck F/A told him that something hit her in the head during the accident. He returned to the 1L jump seat and made a PA announcement instructing passengers to remain seated. A man from 13C ran upstairs to check on “the Rabbi.”

d) A deadheading F/A came up and asked if he had talked to the captain and did they need help. The purser instructed him to “just keep people seated.” The deadheading F/A made an announcement about staying seated.

e) When the rescue personnel arrived, he tried to disarm the 1L exit. He was unable to place the mode selector in manual. He told the L1A F/A to stay at the 1L door and he went to the 1R exit where the R1 F/A placed the mode selector in manual. The purser got down on the floor to verify that the girt bar was disengaged and determined that the girt bar was still engaged. They did not attempt to open the door. He went to the 2L door and placed it in manual and the rescue personnel opened the door. The rescue personnel wanted an orderly evacuation and he made an announcement from the 2L door about how they were going to deplane.

f) The purser did not, at any time, think that they would evacuate the airplane.

g) When he made his PA announcements he thought that the entire cabin had heard the announcements. He did not believe that he made an “All Call” to communicate with the other F/As, nor did he receive any calls on the interphone. He did not use “PP” (pilot priority) when he called the cockpit. During deplaning he learned that a cart had hit an F/A.

h) The halon fire extinguisher at his station was secured in its brackets before the accident, and it was on the floor following the accident. During the accident he heard the upper deck F/A and the R1 F/A shouting commands to passengers to get their heads down. He did not shout commands. It seemed to him that the airplane was still level when it stopped. None of the F/As reported problems securing carts before departure.

## **2) F/A Seated at L2.**

a) During takeoff she felt a “bump” and then the airplane stopped and she waited for an announcement from the captain. She smelled smoke when they stopped and she thought that the airplane was at an unusual attitude, but she did not think there was “imminent danger.” When she got up from the jump seat and looked out, all she saw was snow. She did not try to contact anyone. The R2 F/A went forward to get the purser but when he returned to the R2 door, he had not learned anything. She heard the pilots make an announcement that there was no threat of fire, that they intended to “hold off” on an evacuation in order to prevent injuries, and the Aircraft Rescue and Fire Fighting (ARFF) personnel would help them off the airplane.

b) Passengers in the C Zone could not hear the announcements and questioned her about what was happening. She said that the passenger listened to the F/As, and that no overhead bins on the left side of the C Zone opened up. She remained at her door and eventually the 2L door was opened from the outside and the ARFF personnel ordered the passengers to deplane.

c) The L2 F/A is responsible for securing the mid galley. She checked that latches were set over containers and carts and that the brakes (two pedals) on the carts were set. She was asked about the airplanes that had mushrooms in the galleys and she said the mushrooms still require that the latches be set and the brakes applied. She did not think that the accident airplane had mushrooms. She determined if a cart was secure by checking that the cart fit snugly into the storage area.

## **3) F/A Seated at R2.**

a) During takeoff he noticed that the “power [had] come back” and he thought that they were having an aborted takeoff. He saw the No. 4 engine separate from the airplane. He monitored the passengers and the other F/As. He smelled an odor and tried to call the purser but did not get an answer. He walked forward to the middle of the B Zone and talked to the R-1 F/A. He told the R-1 F/A about the odor and the R2 F/A said he would relay it to the purser. A lot of passengers got up to get their luggage when the airplane stopped. Before the airplane came to a complete stop a bin located next to the oven in the mid galley popped out about 2–3 inches, and the L2 F/A got out of her seat to secure it. He thought that the L2 F/A was standing while the airplane was still sliding. He thought that the reason the bin came out was because the bin was smaller than the opening and the latch did not catch the top of the bin.

b) He saw one or two sidewall overhead bins open on the right side of the airplane but he did not remember luggage “flying around.” A garment bag that was stowed under a seat in the row in front of him “jumped the restraining bar under the seats” and came to rest in front of the R2 exit. A few oxygen masks fell in the C Zone. There were no lap babies on the right side of the C Zone. He did not use the interphone system following the accident. He did not receive any calls nor did he make any calls. He heard the captain make a PA announcement that said something about the pilots had done an “emergency check” and that they would wait for busses to come to the airplane to take passengers to the terminal. He thought that the PA at R2 sounded “lower than normal” after the accident.

c) When the airplane stopped he did not think that they would evacuate because he did not see evidence of fire and the captain’s announcement said that they would deplane using stairs. When they began to deplane passengers, the R1 F/A deplaned with the unaccompanied minors and the R2 F/A watched both R1 and R2 doors. He helped some of the passengers over “the bump” in the A Zone.

#### **4) F/A Seated on Upper Deck.**

a) The airplane built up speed for takeoff and then she heard a loud bang; the airplane tilted to one side and then there was another loud bang. She shouted commands, “Grab ankles,” and “Heads down.” She could hear another F/A on the main deck also shouting commands. She could only see two passengers in the upper deck and they followed her commands. During the time that she shouted commands to passengers, she attempted to bend over, but her shoulder harness straps were “really tight” and restricted her movement.

b) She followed the purser into the cockpit and heard the captain tell him to keep the passengers seated. When the purser left the cockpit he told her to keep everyone seated. She could not remember if she heard the captain give those instructions over the PA. She did not recall hearing any PA announcements nor did she speak with anyone on the interphone.

c) During the accident the “doors to the bins (in the galley) flew open and items flew out of the compartments.” The items that came out included a coffee pot and her makeup and shoes that she had stowed before takeoff. She did not remember any problems securing the galley and it was secured for takeoff. She could not remember which bins opened.

#### **5) F/A Seated at R4.**

a) She heard the engines “run up” for takeoff and after a few seconds the airplane skidded to the right on the runway. She did not hear the engines any longer and she heard a “crunching or tearing” noise and she saw the No. 4 engine “skidding down the runway.” The airplane began going up and down (about twice) and it felt like the airplane was hitting something. They stopped abruptly. While they were still moving a large number of overhead bins opened and spilled their contents. The larger, side bins spilled the greatest number of items.

b) While the airplane was going “up and down,” she heard a “metal sound” in the galley and an ice cart and a beverage cart, that was next to (aircraft left side) the ice cart came loose in the “E” galley. The ice cart hit her shoulder and then came around in front of her and stopped and remained upright in front of the unoccupied passenger seats across from her.

The beverage cart came right behind it and ended up tilted against the seats. She was tightly strapped into her jump seat and there was no way that she could get out of the way of the carts. A deadheading F/A, the L4 F/A, and a passenger pulled the carts away from her and restowed them in the galley.

c) She smelled kerosene, as did the passengers. Some of the passengers “became hysterical,” and were concerned about the smell of kerosene, the angle of the airplane, and the fact that ARFF equipment was around the airplane. If a cart had not injured her, she would have evacuated. She did not hear any PA announcements and the deadheading F/A went forward to talk to the purser. She eventually learned that they were to keep the passengers seated. She walked the aisles to check on passengers and in-lap infants. She did not use the interphone or the PA system.

d) During the accident she shouted the commands “Grab ankles, stay down” to passengers. She stated that it was “pretty loud back there” but that two to three people obeyed her commands. She noted that a woman behind the galley obeyed the commands.

e) Prior to departure she “iced down her beverage cart,” and noted that the “ice cart had a swing brake.” The ice cart was not secured to the mushroom when she obtained ice. She tried to lock it but could not. She told the L4 F/A that the cart was not secure and she asked the R5 F/A if he could secure the cart. She stated that the type of “side locks” used on the ice carts are difficult to operate. She did not double-check the galley security before takeoff because she was so busy stowing carry-on luggage. She stated that the caterers are supposed to secure the carts, but that when she works the galley she verifies cart security by “pulling on the carts very hard.”

f) She was diagnosed with a possible hairline fracture of the shoulder, a rotator cuff tear, and tissue damage in her right shoulder.

#### **6) F/A Seated at R5.**

a) He did not remember seeing any handicapped passengers or in-lap infants. He recalled that the weather was not good and the ground was covered with snow. He heard the engines start up and then die down again. The engines started up for a second time and they began the takeoff roll. He thought that the takeoff roll “felt weird” and that the speed seemed “constant for too long.” It got very, very bumpy and bouncy and he actually thought that they were off the ground. Some overhead bins opened and luggage fell out.

b) He thought that the passengers in the rear cabin stayed pretty calm. He never felt a need for an evacuation. He got out of his seat but stayed by his exit. He did not hear any announcements and he did not use the interphone to call other F/As for information. About 5 to 10 minutes later, the interphone rang and the purser instructed him to keep people seated. He went through the E Zone to see if anyone needed anything.

c) He did not notice if the emergency lights came on. He did not recall anyone speaking to him about the security of the ice module. He never works the galley and was not sure about the ice cart brakes. With other types of carts, the carts are secured by the cart’s brake and the latches mounted on the galley. He was unfamiliar with the “mushroom” restraint for the

carts. He would ensure that carts were secure by putting on the brake and putting down the latches. He assumed that he gave the cart a tug to check it, but did not count it as a step in the process because giving the cart a tug was a “habit.” He had not experienced problems securing carts—he had experienced problems getting them out from stowage. If a cart was not secure he would tell the assistant purser or get a mechanic to help him secure it.

d) On a previous flight, a senior F/A told him not to put the heavier beverage carts next to the garbage bin because the securing latch was mounted on the garbage bin door. He also recalled that carts “came out” even when latches were in place.

#### **7) F/A Seated at L4 (Assistant Purser Position).**

a) The captain made an announcement when they were deiced, and the emergency lights came on when they were deiced. It was a normal takeoff and then the airplane started sliding. The airplane stopped abruptly and the overhead bins in the E Zone opened and spilled their contents. “There was luggage all over the place.” She released her restraints and got up and looked out the window. She could see that they were off the runway and that the wing was “close to a pole.” She tried to call the purser on the interphone but was unable to reach him. She communicated with the L3 F/A who came back to the L4 position.

b) This was her first trip working the galley. She secured the galley and everything seemed normal—she did not have trouble securing anything. She said that the L4 F/A “double checked” that the latches were secured. After the accident, the secondary securing latch for the ice cart in the E Galley was “bent upwards.”

#### **8) F/A Seated at L5.**

a) The airplane stopped to deice and the emergency lights came on. During takeoff she noticed the airplane vibrating and it veered to the right and then veered to the left. She did not think that the engines “sounded right.” She did not shout commands during the event. When the airplane stopped she got up and looked out and saw transformers to the left of her exit; however, they were not blocking her exit. She did not believe that she needed to evacuate the airplane, but if one had been ordered, should would not have used the L5 exit because it was too far from the ground. She knew that the airplane was not in its “normal position and it was in a tail-high attitude.” She did not see emergency personnel outside the airplane when she first looked outside.

b) All of the overhead bins on the left side of the E Zone and the baggage spilled into the cabin. After the airplane stopped, she and the L4 F/A rested all of the luggage that spilled into the E Zone.

c) There were no announcements after the airplane stopped and she tried to call the purser on the interphone but no one answered. About 20 minutes after the accident, she heard the L4 F/A shout instructions to the passengers in the E Zone that the emergency personnel had instructed them to “release people by row.” She repeated these instructions to the passengers in the aft cabin. She attempted to call the L1 F/A, but the call was unanswered. No F/A came to the L5 door but she communicated with, or received information from, the R5, R4 and L4 F/As.

**9) F/A Seated at R1.**

a) The airplane began to accelerate and the engines got louder. He felt “a little movement” and the engines were reversed. The plane began “really shaking, there was a big bang that was like a crushing sound.” He heard people screaming and he began to yell commands, “Grab ankles, stay down.” The airplane came to a full stop and he stood up. He did not see any immediate danger near him or toward the back of the cabin. If he had seen anything dangerous he would have initiated an evacuation. Two seats in the middle of the A Zone (occupied by children) were unusually high above the floor. He did not hear instructions to evacuate. He looked out the window and saw snow.

b) A couple of seconds later, the purser positioned the L1A F/A at the L1 door and went to the cockpit. He heard an announcement from the cockpit to “please remain seated” and told the passengers that there was no “imminent danger” and that they would wait for the rescue personnel to get to the airplane and tell them how they would deplane. At the same time that the captain made his announcement, passengers were getting their bags down from the overhead racks. The passengers had begun to calm down although there were still some passengers who were crying. The purser returned to L1 and made a PA announcement instructing passenger to please remain seated. The captain’s announcement was much louder than the announcement made from L1.

c) The purser tried to place the 1L door’s mode selector lever to the manual position but he could not do so. The captain instructed the purser to open the 1R door. The purser had the same problem at 1R as he had at 1L. The purser then went to 2L and opened that exit. The police and an FAA official boarded the airplane and the police instructed them to deplane Zones A, B, and the upper deck, and then Zones C, D, and E.

d) The R1 F/A took charge of about five unaccompanied minors who were seated in the A and B zones and deplaned. They were transported to the gate using “people movers” and he released the unaccompanied minors to a gate agent.

e) The R1 F/A did not use the interphone after the accident; however, he used it successfully prior to departure. He secured the forward galley but the top small drawer of the ice cart came out during the impact and hit the spiral staircase and landed on the floor. The overhead bins in Zone A remained closed during the accident.

**10) Deadheading F/A.**

a) He was traveling in uniform and was seated in the “A” passenger seat at the L4 exit. He remembered that the engines were powered up and the runway was very bumpy. The airplane decelerated and he sensed that they had run off the runway because the airplane was going “up and down” and “side to side.” He looked around and saw a few (about 6 to 10) overhead bins that opened and spilled their contents into E Zone. Most of the bins that opened were sidewall bins on the right side of the Zone E. He said that one or two bins open during a “normal landing.”

b) When the airplane stopped, a cart came out of the forward-facing galley, hit the counter opposite it, and then hit the R4 F/A. He did not notice the attitude of the airplane

until he stood up; then he realized that the airplane was in a nose down attitude. He crossed over to R4 and pulled the carts off the R4 F/A and placed them against the galley counter. When the airplane stopped he did not have a sense of catastrophe. He did not see smoke or fire and therefore there was “never a question” of whether to evacuate.

c) He instructed passengers to remain seated. Some passengers pointed out that there were wires dangling from the right wing. He saw that a right-side engine was missing but did not see any smoke. There were no announcements and after a few minutes he walked to the front of the cabin. He saw the damage in the A Zone and asked the purser why there had been no announcements. The purser told him that there had been an announcement.

d) The R1 F/A told him that he though he smelled something unusual. They heard the captain make an announcement that the situation was manageable and that everything was okay. He walked back into the C Zone and tried to calm passengers and answer their questions. He told passengers that they were waiting for the port authority to help them deplane. He did not walk back to L4, nor did he communicate with F/As aft of the L3/R3 exits.

e) He made a PA announcement from the L2 station and explained how the port authority wanted the passengers to deplane. Passengers in the B and C zones heard the announcement because they reacted to the directions that were given.

f) The red securing latch was bent “straight out” in the space where the ice cart had come loose in the E galley. He did not notice the securing latches of the other carts. He did not remember whether the beverage cart’s brake was engaged when he pulled from the R4 exit.

#### **F. Tower Air Galley Equipment.**

1) The air carrier operated airplanes with three types of service carts. The carts are referred to by the name of the airline that previously owned the airplane. Thus, carts are referred to as Atlas carts, TWA carts, and Pan Am carts, and can only be used in the galleys of the appropriately corresponding airplanes. A brief summary of the cart’s securing devices are listed below:

- Atlas Carts: Foot pedal brake activation; are not used with mushrooms.
- TWA Carts: Foot pedal brake activation; are secured on mushrooms in galley.
- Pan Am Carts: Hand lever brake activation; secured on mushrooms in galley.

2) F/As received instruction during initial training about cart operation. A single cart is brought to the classroom and students are shown how the brakes operate and are given a chance to maneuver the cart. The demonstration cart could be any one of the three types of moveable carts that are found on their airplanes. Students are shown the galleys when they do a “walk around” on the airplane; however, no carts are in the galley during the walk around. Students are instructed to ensure that the cart is secure on the floor retainer mushrooms by pulling and shaking the cart to ensure that it will not come loose. Then they are instructed to place the secondary levers down.

3) There are no galley mockups used during classroom training. Slides and/or photographs of carts are not part of initial F/A training. Students receive a “Galley & Service Equipment” handbook during initial training that includes a diagram showing an “Atlas” cart. The booklet also describes preflight procedures for the galley. The preflight check of carts “includes testing of brakes, primary and secondary locking mechanism.”

4) The TWA-type galley includes an ice cart that differs from the other TWA carts in size and mushroom latching. The cart is larger than the other carts and only fits in one location in each galley. The ice cart remains in the galley and is not meant to be moved during the service. The ice cart locks onto a retaining tongue with a lever located on the bottom of the cart. The lever movement inserts a pin through a circular opening in the middle of the retaining tongue on the floor of the galley.

5) After the accident, the investigation team went on another airplane that had been catered and reviewed the locking mechanism of an ice cart in the aft galley complex. The lever at the bottom of the cart was difficult to move to the locked/secured position but the lever was successfully placed in the secured position by moving the lever to the full left position. Confirmation that the cart was secure was assured by pulling on the cart and determining that the cart did not move. The lever could also be moved into a secured position (full left) if the cart was positioned forward of the retaining tongue in its storage area. However, when the cart was forward of the retaining tongue, it was not possible to move the red secondary securing lever to the down position because the cart was forward of the leading edge of the galley counter.

**Table 3-101. Summary of Flight Attendant Training**

| <b>TYPES OF TRAINING AND QUALIFICATION</b> | <b>PROGRAMMED HOURS</b>   | <b>WHEN CONDUCTED</b>                                    | <b>INCLUDES</b>   | <b>14 CFR SECTION</b>                  |
|--|---|--|---|--|
| <b>INDOCTRINATION</b>                      | 40 hrs may be reduced to 32 hrs.  |  | Only safety-related subjects.   | § 121.415                              |
| <b>INITIAL GROUND</b>                      | 16 hrs may be reduced (in addition to indoctrination training for new hires). | Before serving on aircraft of that type.                 | Emergency training plus competency check.   | § 121.421<br>§ 121.433(a)<br>§ 121.417 |
| <b>TRANSITIONAL GROUND</b>                 | No hours stipulated.  | Before serving on aircraft of that type.                 | Emergency training plus competency check.   | § 121.421<br>§ 121.417                 |
| <b>DIFFERENCES*</b>                        | No hours stipulated.  | Before serving on aircraft with those variations.        |   | § 121.418(a)<br>§ 121.433(b)           |
| <b>RECURRENT</b>                           | 12 hours.*  | Every 12 months (hands-on must be given every 24 months) | Emergency training plus competency check.   | § 121.427<br>§ 121.433(c)<br>§ 121.417 |
| <b>EMERGENCY</b>                           | No hours stipulated.  | During initial, transition, and recurrent training.      | Methods include:<br>1) Drills.<br>2) Actual operational.<br>3) Individual instruction.<br>4) Overall instruction. | § 121.417                              |
| <b>OPERATING EXPERIENCE (OE)</b>           | Five hours may be reduced to 2.5 hours.                                       | When initial is completed and before transition.         |   | § 121.434                              |

\* Differences training may be included in initial, transition, and recurrent training, if applicable.

NOTE: There are usually two methods of aircraft training for new-hire F/As:

- Method 1: Initial training on each new aircraft type, followed by OE.
- Method 2: Initial training on one aircraft type followed by OE, and then transition training to the air carriers's other aircraft in that group.

**Table 3-102. Crewmember Survival Training**

| <b>TYPES OF TRAINING</b>                 | <b>SUBJECT AREAS</b>  |  |
|--|---|--|
| <b>STANDARD FIRST AID</b>                | Introduction to first aid.<br>Mouth-to-mouth breathing.<br>Direct pressure, elevation, and pressure points.<br>Wounds.<br>Burns.<br>Head and internal injuries.<br>Effects of heat and cold.<br>Obtaining help in an emergency. | Respiratory emergencies.<br>Heart attack and stroke.<br>Tourniquets.<br>Shock.<br>Bandaging.<br>Fractures, sprains, and strains.<br>Escaping from fire.<br>Emergency rescue. |
| <b>THE WILL TO SURVIVE</b>               | Mental attitude required for successful survival.<br>Priorities of life and their significance in survival.<br>Actual examples of the will to survive being a factor.   | The possibility of a survival situation occurring.<br>Environmental conditions for consideration.<br>Stresses that may be encountered.<br>Enemies that must be overcome.     |
| <b>SURVIVAL SKILLS</b>                   | Fire-building.  | Navigation in survival.  |
| <b>SURVIVAL AID</b>                      | Forms of artificial respiration.<br>Treatment of fractures, dislocations, and sprains.<br>Snake bite.<br>Bleeding control and improvising in various environments.  | Environmental problems.<br>Shock and mandatory actions.<br>Infections, treatment, and prevention.<br>Significance of hygiene in survival.                                    |
| <b>AIRCRAFT ESCAPE</b>                   | Location and use of emergency exits.<br>Passenger management outside the aircraft.  | Availability and use of emergency equipment.   |
| <b>SURVIVAL EQUIPMENT</b>                | Minimum survival gear.<br>Life preserver operation.<br>Water survival kits.<br>Flotation type cushions/life vests.  | First aid kit.<br>Rafts.<br>Operation of radios.   |
| <b>SIGNALING AND RECOVERY OPERATIONS</b> | Recovery operations.<br>Recovery devices.   | Emergency signaling.<br>Recovery techniques.   |
| <b>OPERATIONAL USE OF EQUIPMENT</b>      | Demonstration on use of all available survival equipment.   |  |
| <b>DESERT SURVIVAL</b>                   | Signaling techniques peculiar to deserts.<br>Body dehydration problems.<br>Clothing requirements.<br>Characteristics of deserts in applicable geographic area.  | Travel considerations.<br>Water procurement in deserts.<br>Shelter requirements.<br>Special medical problems encountered in deserts.   |
| <b>ARCTIC SURVIVAL</b>                   | Hypothermia.<br>Clothing required.<br>Travel considerations.  | Hazardous conditions.<br>Signaling techniques.   |
| <b>DITCHING AND</b>                      | Preparation for ditching phase.   | Alert phase.   |

|                           |   |   |
|---------------------------|---|---|
| <b>WATER<br/>SURVIVAL</b> | Ditching phase.<br>Raft actions.<br>Water-connected medical problems.<br>Recovery operations. | Rescue phase.<br>Survival needs.<br>Signaling techniques. |
|---------------------------|---|---|

**RESERVED.** Paragraphs 3-1873 through 3-1890.

**VOLUME 3 GENERAL TECHNICAL ADMINISTRATION****CHAPTER 25 OPERATIONAL CONTROL FOR AIR CARRIERS****Section 3 Part 121 Flight Release Systems and Supplemental Operating Rules**

**3-1971 GENERAL.** This section contains information for inspectors regarding Title 14 of the Code of Federal Regulations (14 CFR) part 121 flight release systems and the release of flights under the part 121 requirements applicable to certificate holders conducting supplemental operations.

**A. Persons Authorized to Exercise Operational Control.** In accordance with part 121, § 121.537, each certificate holder conducting supplemental operations is responsible for operational control. The pilot in command (PIC) and the certificate holder's Director of Operations (DO) are jointly responsible for the initiation, continuation, diversion, and termination of a flight. The DO may delegate the authority to perform operational control functions to other persons; however, the director retains the responsibility. Persons designated by the DO to exercise operational control are often referred to as flight followers.

1) Section 121.537(a)(2) requires the certificate holder to list the name of each person authorized to exercise operational control in its operation manual, which is often referred to as a General Operations Manual (GOM).

2) Certificate holders conducting supplemental operations may contract with other certificate holders or organizations to provide certain elements of an operational control system, such as communications, flight following, etc. In such a case, the certificate holder must list the name of each employee of the contracting organization authorized to provide such elements of operational control in their GOM. If an emergency situation arises during flight that is known to personnel of the contracting organization, those personnel will advise the PIC of the emergency, ascertain the decision of the PIC, and have the decision recorded. If they cannot communicate with the PIC, they will declare an emergency and take any action that they consider necessary under the circumstances.

**B. Release Authority.** PICs are responsible for preflight planning and the safe conduct of the flight. Section 121.597 prohibits a supplemental flight from departing, however, without the specific authority from the person designated to exercise operational control over the flight. The PIC or the person authorized to exercise operational control must prepare a flight release containing the specific conditions under which the flight can be conducted safely. The PIC must sign the flight release before the flight may depart. In accordance with § 121.597(b), a PIC may sign the release only when he or she and the person authorized to exercise operational control agree that the flight can be safely conducted as planned. Inspectors must ensure that the certificate holder's GOM contains specific procedures to ensure that the certificate holder, PICs, and persons authorized to exercise operational control are in compliance with this requirement. Unless the PIC decides it is unsafe to do so, the PIC must conduct the flight in accordance with the flight release.

**C. Flight Monitoring.** The certificate holder, in accordance with § 121.125, is responsible for ensuring the proper monitoring of the progress of each flight with respect to its departure from its point of origin and arrival at its destination, including intermediate stops. Section 121.537(c) requires that the DO take action to delay, divert, or cancel a flight when, in the opinion of the DO or the PIC, the flight cannot be operated safely as planned or released. The DO, or the person designated by the DO to exercise operational control, must actively review the conditions surrounding each flight to comply with this requirement.

**D. Demonstration of Competency of Persons Designated to Exercise Operational Control.** Title 14 CFR part 119, § 119.65(d) requires anyone in a position to exercise control over operations to be qualified through training, experience, and expertise. Section 121.127(b) requires that the certificate holder show that each individual authorized to conduct operational control is able to perform the required duties. This rule applies to both employees of the certificate holder and to contract personnel the certificate holder authorizes to perform required duties. The preferred means a certificate holder may use to meet this requirement is to establish a training and qualification program for persons designated to exercise operational control, which includes competency checks, and which meets the requirements of Volume 3, Chapter 22.

**3-1972 FAMILIARITY WITH WEATHER CONDITIONS, FACILITIES, AND SERVICES.** In accordance with § 121.603, a PIC may not begin a flight unless he or she is thoroughly familiar with reported and forecasted weather conditions on the route to be flown and until the PIC has obtained all available reports on airport conditions and irregularities of navigation facilities that may affect the safety of the flight. During the flight, the PIC must obtain any additional available information on meteorological conditions and facilities that may affect the safety of the flight. The certificate holder is responsible for ensuring that the PIC has the means to obtain this information. In accordance with § 121.122(a), each certificate holder conducting supplemental operations other than all-cargo operations in an airplane with more than two engines must show that a two-way radio communications system is available. This in-flight communications system allows the certificate holder to deliver information regarding current weather, facility, and service conditions to the PIC. A certificate holder may contract with a commercial communications service provider to comply with this requirement.

**3-1973 FLIGHT RELEASE SYSTEM FACILITIES.** Each certificate holder conducting supplemental operations must have an approved flight release system. The flight release system must be described or referenced in paragraph A008 of the certificate holder's operations specifications (OpSpecs). Most flight release systems are too complex to be described in a single paragraph; therefore, the preferred practice is for the system to be described in the certificate holder's GOM, and referenced in paragraph A008 of the certificate holder's OpSpecs.

**A. Flight Following Centers.** The certificate holder must provide one or more flight following centers to control and monitor the progress of each flight. For supplemental operations, other than all-cargo operations in an airplane with more than two engines, each flight following center must be equipped with a two-way radio communication system or other means of a communication system approved by the Federal Aviation Administration (FAA). The certificate holder must ensure that this communication system allows for reliable and rapid communication under normal operating conditions over the entire route between each airplane and the certificate holder.

**B. Certificate Holder Responsibilities.** If a certificate holder conducting supplemental operations has contracted with other organizations to provide operational control functions, the certificate holder retains the responsibility for ensuring the adequacy of all facilities, access to communications and information sources, the adequacy of policies and procedures, and the competency of other persons designated to exercise operational control (whether or not the certificate holder or a contracting party provides them).

**C. Certified Personnel.** There is no requirement for persons designated to exercise operational control to have aircraft dispatcher certificates; however, principal operations inspectors (POI) should strongly encourage certificate holders to employ certified personnel in this capacity.

**D. Training Program and GOM Requirements.** Inspectors must ensure that the certificate holder's training program and GOM contain adequate policy, guidance, procedures, and training for operational control personnel to perform their assigned duties, comply with regulatory requirements, and to ensure safe operations in normal, abnormal, and emergency circumstances. Flight followers must be familiar with, and have access to, the certificate holder's GOM when on duty.

**3-1974 FLIGHT RELEASE FORM.** A flight release form must be completed before each flight. Section 121.689(a) and (b) specifies that a flight release must contain at least the following information:

- Company or organization name.
- Make, model, and registration number of the aircraft.
- Flight or trip number.
- Date of flight.
- Name of each flightcrew member, flight attendant (F/A), and the pilot designated as PIC.
- Departure airport, destination airport, and alternate airports.
- Route of flight.
- Minimum fuel supply (in gallons or pounds).
- Type of operation (such as instrument flight rules (IFR) and visual flight rules (VFR)).
- Weather reports, available weather forecasts (or a combination thereof) for the destination airport and alternate airports that are the latest available at the time the PIC signs the flight release. (Print these on or attach them to the flight release.)
- For each flight released as an Extended Operations (ETOPS) flight, the ETOPS diversion time for which the flight is released.

**3-1975 WEATHER REQUIREMENTS FOR FLIGHT RELEASE WITHIN THE CONTIGUOUS STATES.** Inspectors must ensure that certificate holders are aware of the weather requirements for the release of supplemental flights within the contiguous states. Volume 3, Chapter 25, Section 4, contains a discussion of flight release requirements for the release of flights to, from, or outside the contiguous states.

**A. Flight Release Under VFR.** Section 121.611 prohibits any person from dispatching or releasing a flight for VFR operations unless the ceiling and visibility en route and at the destination airport are VFR and will remain above applicable VFR minimums until the aircraft arrives at the airport or airports specified in the flight release.

NOTE: Part 121 flights may not be released under VFR rules unless specifically authorized in the certificate holder's OpSpecs.

**B. IFR Takeoff Weather Minimums.** Section 121.651(a) prohibits the release of a flight when the weather at the departure airport is reported to be less than the takeoff minimums specified in paragraph C056, IFR Takeoff Minimums, Part 121 Operations—All Airports, of the certificate holder's OpSpecs. However, § 121.617 allows the weather conditions to be below the landing minimums specified in the certificate holder's OpSpecs at the departure airport if the flight release specifies an alternate airport for departure, commonly referred to as a takeoff alternate. The takeoff alternate must meet the following conditions:

- 1) For a two-engine airplane, the takeoff alternate is not more than 1 hour from the departure airport at normal cruising speed, in still air, and with one engine inoperative.
- 2) For an airplane with three or more engines, the takeoff alternate is not more than 2 hours from the departure airport at normal cruising speed, in still air, and with one engine inoperative.
- 3) The weather conditions at the designated takeoff alternate airport meet the requirements of paragraph C055 of the certificate holder's OpSpecs.

**C. Destination Weather—IFR Operations.** Section 121.613 prohibits a certificate holder from releasing a flight under IFR or over-the-top rules unless the weather reports and forecasts indicate that the weather will be at or above minimums required by the OpSpecs at the destination airport at the estimated time of arrival (ETA). Category I minimums are authorized in paragraphs C053 and C054 of the OpSpecs. Category II and III minimums are authorized in paragraphs C059 and C060 of the OpSpecs, respectively.

**D. Alternate Requirements.** Section 121.623(a) prohibits certificate holders conducting supplemental operations from releasing a flight under IFR or over-the-top rules unless at least one alternate airport is listed in the flight release for each destination airport. For supplemental operations conducted outside of the 48 contiguous states over routes without an available alternate airport, the fuel requirements of §§ 121.643(c) and 121.645(c) apply based on the type of aircraft being operated. The airports for which there is no available destination alternate should be listed in the certificate holder's OpSpec paragraph C067, in accordance with Volume 3, Chapter 18, Section 5, OpSpec C067.

**3-1976 FUEL REQUIREMENTS.** Inspectors must be aware of the fuel requirements for supplemental flights operating within the 48 contiguous states as well as for flights operating outside of the 48 contiguous states.

**A. Flights Conducted Within the 48 Contiguous United States.** In accordance with § 121.645(e), for supplemental operations conducted within the 48 contiguous states and the  
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District of Columbia with a turbine-engine-powered airplane, the fuel requirements of § 121.643 apply. (The fuel planning provisions of § 121.643 apply to all nonturbine and turbopropeller supplemental flights.)

**B. Flights Conducted Outside of the 48 Contiguous United States.** For flights conducted outside of the 48 contiguous states, the requirements of § 121.645(a) through (d) apply.

NOTE: Section 121.647 applies to all operations conducted under part 121.

**C. Required Fuel Supply.** When conducting supplemental operations, a certificate holder may not release a flight and a pilot cannot take off unless, considering winds and forecast weather conditions, the flight carries all of the following types of fuel:

**1) En Route Fuel.** That fuel necessary for a flight to reach the airport to which it is released, and then to conduct one instrument approach and a possible missed approach.

**2) Alternate Fuel.** That fuel necessary for a flight to fly from the point of completion of the missed approach at the destination airport to the most distant alternate airport, make an IFR approach (if the forecast indicates such conditions will exist), and then complete a landing.

**3) Reserve Fuel.**

a) For Operations Outside of the 48 Contiguous States. The fuel required to fly for a period of 10 percent of the total time required to fly from the airport of departure to, and land at, the airport to which it was released (§ 121.645(b)(2)).

b) For Operations Within the 48 Contiguous States. The fuel required for a flight to fly for 45 minutes at normal cruising fuel consumption (§ 121.639(c)).

**4) Contingency Fuel.** That fuel necessary for a flight to compensate for any known traffic delays and to compensate for any other condition that may delay the landing of the flight (§ 121.647).

NOTE: The certificate holder's GOM should contain specific policies and instructions to PICs and persons authorized to exercise operational control for computing the amount of contingency fuel to be carried under the circumstances likely to be encountered in the certificate holder's specific operation.

**D. Departure Fuel.** Sections 121.643 and 121.645 require that the fuel listed in subparagraphs 3-1976A through C be on board the aircraft at takeoff. The required fuel must be specified in the flight release. The certificate holder's GOM should include procedures regarding this fuel requirement for pilots and persons authorized to exercise operational control. Procedures should also ensure that PICs and the person authorized to exercise operational control of the flight must include an additional increment of fuel for startup, taxi, and predeparture delays.

**3-1977 AMENDMENT OF A FLIGHT RELEASE.** In the absence of an emergency, a flight may only proceed to the destination to which it was originally released. If the flight is unable to land at the original destination, it may only proceed to the designated alternate airport. Section 121.631 allows, however, for an original flight release to be amended while the flight is en route. An amendment may become necessary or desirable because the conditions under which the flight was released have changed (unplanned rerelease) or because it may have been planned before departure.

**A. Destination Weather Requirements While En Route.** Section 121.603(b) requires PICs to obtain any information on weather and facilities that may affect the safety of flight while flights are airborne. Part 121 does not prohibit a flight from continuing toward a destination which has gone below landing minimums or one which is forecast to be below landing minimums at the ETA by a forecast issued after the flight has departed. For example, there may be enough fuel on board to hold overhead the destination until the weather is forecast to improve. Section 121.627(a) does, however, prohibit the flight from continuing to the destination when, in the opinion of the PIC, it is unsafe to do so. POIs should ensure that the certificate holder's GOM provides guidance to both PICs and persons authorized to exercise operational control for dealing with these circumstances.

**B. Alternate Weather Requirements While En Route.** Section 121.631(b) prohibits the flight from continuing to a destination airport unless the weather conditions at the alternate airport (specified in the flight release) are forecast to be at, or above, the required alternate minimums at the ETA at the alternate airport.

1) An alternate airport may be named, which is below alternate minimums at the time of release, but which is forecast to be above minimums at the ETA. POIs should ensure that the certificate holder's GOM contains specific procedures, however, for notifying the PIC and for monitoring the weather at the alternate airport when the selected alternate airport is below minimums at departure. These procedures may require the designation of a second alternate airport or that contingency fuel must be carried on the flight.

2) Ceiling, visibility, and items such as the condition of Navigational Aids (NAVAID), runway lighting, and snow removal operations can affect alternate minimums. PICs and persons authorized to exercise operational control must monitor these factors at designated alternate airports.

**C. Requirements to Amend a Flight Release.** Section 121.631(f) and (g) requires that before a destination airport or an alternate airport may be changed, the following conditions must be met:

1) The change must be jointly approved by the PIC and the person designated to exercise operational control of the flight.

2) The PIC must be thoroughly familiar with reported and forecast weather conditions (including adverse weather) and the status of communications, navigation, and airport facilities.

3) The destination and alternate airports specified in the amended release must be forecast to be above the weather minimums required in the certificate holder's OpSpecs for the destination and alternate airports, respectively, at the ETA.

4) The aircraft must have sufficient fuel on board at the time and point that the release was amended to complete the flight in compliance with the applicable fuel requirements.

5) Each person who amends a flight release must record that amendment.

**D. Preplanned Amendment of a Flight Release.** A part 121 certificate holder may only conduct planned rerelease operations when authorized by paragraph B044 of the certificate holder's OpSpecs. Volume 3, Chapter 25, Section 4, contains a discussion of planned rerelease procedures.

NOTE: Paragraph B044 does not apply to domestic operations within the 48 contiguous states.

**3-1978 EN ROUTE TERRAIN CLEARANCE.** Part 121 subpart I contains the limitations on weights at which aircraft may be released due to terrain clearance requirements. While these limitations apply to all types of aircraft operated under part 121, they are particularly restrictive to two-engine aircraft operated in the western part of the United States. Inspectors should be aware that to meet the limitations of subpart I, certificate holders may be required to limit takeoff weights or to list en route alternate airports on the flight release (see Volume 4, Chapter 3).

**RESERVED.** Paragraphs 3-1979 through 3-1995.

**VOLUME 3 GENERAL TECHNICAL ADMINISTRATION****CHAPTER 26 AVIATION WEATHER REGULATORY REQUIREMENTS****Section 2 Regulatory Sources of Aviation Weather Information and Aviation Weather Information Systems – Parts 91K, 121, and 135**

**3-2071 PURPOSE.** This section focuses on aviation weather sources that are either specified by regulation or subject to approval by the Administrator. The information in this section is applicable to all Title 14 of the Code of Federal Regulations (14 CFR) parts 91 subpart K (part 91K), 121, and 135 operations except where otherwise noted. Paragraph 3-2074 of this section discusses the sources for aviation weather forecasts by regulatory part.

**3-2072 BACKGROUND.** Title 14 CFR contains regulatory requirements for certificate holders and program managers conducting aircraft operations in accordance with parts 91K, 121, and 135 to use specific sources, or specific facilities, for obtaining weather reports and forecasts. Some sources/facilities are specified by regulation, while others are up to the Administrator's discretion to approve. These sources are discussed throughout this section. An overview of aviation weather regulatory requirements is located in Volume 3, Chapter 26, Section 1.

NOTE: When used in this chapter, the terms "dispatcher" and "aircraft dispatcher" are considered synonymous and may be used interchangeably.

**A. Aviation Weather Information Systems.** These are systems used by certificate holders and program managers to obtain and disseminate aviation weather reports and forecasts. Aviation weather information systems are discussed in greater detail later in this section.

**B. Aviation Weather Products.** The various types of weather reports and forecasts, such as those of adverse weather phenomena, are often referred to as weather products. The development of new aviation weather products is an evolutionary process with distinct stages of product maturity. The growing demand for new weather products and the corresponding increase in research and development to meet that demand has led to the availability of a wide variety of weather information, some of which may be experimental in nature. Consequently, the Federal Aviation Administration (FAA) finds it necessary to draw a distinction between weather products that satisfy regulatory requirements and can be used to control flight operations versus those that may provide useful information that could be used to enhance situational awareness. In order to draw such a distinction, the FAA has developed the following definitions.

**1) Primary Weather Product.** For the purpose of this order, a primary weather product is one that meets the pertinent 14 CFR regulatory requirements for aviation weather. These products may be used to control flight movements (operations). Certificate holders and program managers must use primary weather products for all operational decisionmaking. Examples of primary weather products include, but are not limited to:

- Weather reports and forecasts prepared by the National Weather Service (NWS) or a source approved by the NWS,
- Weather reports and forecasts prepared by FAA-approved adverse weather phenomena reporting and forecast system,
- Weather reports and forecasts issued by an FAA-approved Enhanced Weather Information System (EWINS), and
- Weather reports and forecasts approved for use by the Administrator, in accordance with part 91, § 91.1039(a)(1); part 121, §§ 121.101(b)(2) and 121.119(a); and part 135, § 135.213(a), as applicable.

NOTE: Certificate holders and program managers are allowed by regulation to use primary weather products provided by the NWS or a source approved by the NWS. Certificate holders/program managers may only use primary weather products produced by an EWINS, adverse weather phenomena reporting and forecast system, or by any other source subject to approval by the Administrator, when specifically authorized in Operations Specification (OpSpec)/Management Specification (MSpec) A010, Aviation Weather Information. Specific guidance on approving sources of aviation weather in OpSpec/MSpec A010 is located in Volume 3, Chapter 18, Section 3.

**2) Supplementary Weather Product.** For the purpose of this order, a supplementary weather product is one that may be used to enhance situational awareness, but that does not necessarily meet the regulatory requirements of 14 CFR. Certificate holders and program managers may not use supplementary weather products to control flight operations. Examples of supplementary weather products include, but are not limited to:

- Experimental weather reporting or forecasting tools or systems, and
- Weather information obtained outside of the certificate holder's/program manager's system and/or procedures for obtaining weather information (e.g., via television, public radio, or personal handheld device).

NOTE: Principal operations inspectors (POI) will not authorize supplementary weather products in a certificate holder's/program manager's OpSpec/MSpec A010 because supplementary weather products are not intended for use as a means to comply with the regulatory requirements for aviation weather.

**C. Aviation Weather Reports—Surface Observations.** Surface weather observations are fundamental to all meteorological services. Observations are the basic information upon which forecasts and warnings are issued in support of aviation safety. Surface observations are issued as Aviation Routine Weather Reports (METAR) or Aviation Selected Special Weather Reports (SPECI). A METAR is a regularly scheduled report that is typically issued hourly, while a SPECI is an unscheduled report issued between the hourly METAR. A SPECI will be issued when conditions such as wind shift, a drop in visibility or Runway Visual Range (RVR), or adverse weather phenomena change significantly. The criteria used to determine whether or not a SPECI is necessary can be found in the current addition of Advisory Circular (AC) 00-45, Aviation Weather Services.

**D. Required Elements of a Surface Weather Report/Observation.** Aircraft performance is predicated on aircraft weight, ambient temperature, wind direction, wind speed, and altimeter setting. In order to ensure aircraft takeoff and landing limitations are met and obstacles are avoided, an aviation weather report must contain at least the following elements.

- The station identifier (e.g., airport code),
- Date and time of observation (to establish relevance of the report),
- Ambient temperature at the station (e.g., airport or seaport),
- Wind direction,
- Wind speed,
- Altimeter setting at the station,
- Visibility (for obstacle avoidance and instrument approach procedures (IAP)), and
- Ceiling (only where required by published airport minimums).

NOTE: Local altimeter setting is required unless the current published approach plate lists an alternate source.

NOTE: Most surface observations will also contain dew point information and remarks.

**E. Aviation Weather Reports—Adverse Weather Phenomena.** Reports of adverse weather phenomena are based on real-time information provided by radar and satellite imagery. Pilots can also report adverse weather phenomena, when encountered or observed, via Pilot Weather Reports (PIREP). Reports of adverse weather phenomena are issued by the NWS, in the United States, and by meteorological offices operated by foreign States outside of the United States. Reports of volcanic ash are issued by the Volcanic Ash Advisory Center (VAAC), which has locations worldwide. Examples of types of reports of adverse weather phenomena are as follows.

**1) Significant Meteorological Information (SIGMET).** A SIGMET advises (reports) and/or forecasts potentially hazardous weather other than convective activity. SIGMETs are issued for the following adverse weather phenomena:

- Severe icing,
- Severe or extreme turbulence,
- Duststorms and sandstorms lowering visibilities to less than 3 miles,
- Volcanic ash,
- Thunderstorm activity outside of the 48 contiguous United States,
- Radioactive cloud, and
- Tropical cyclone activity.

**2) Convective SIGMET.** Convective SIGMETs are issued for thunderstorm-related aviation hazards. A convective SIGMET implies severe or greater turbulence, severe icing, and low-level wind shear. Convective SIGMETs may report actual phenomena and/or forecast future phenomena. The following types of adverse weather phenomena are contained in a convective SIGMET:

- a) Severe surface weather including:
  - Surface winds greater than or equal to 50 knots,
  - Hail at the surface greater than or equal to  $\frac{3}{4}$  of an inch in diameter, and
  - Tornadoes.
- b) Thunderstorm activity in the 48 contiguous United States.

**3) Airmen's Meteorological Information (AIRMET).** An AIRMET advises of potentially hazardous weather that does not meet SIGMET criteria. AIRMETs are issued for the following adverse weather phenomena:

- a) Instrument flight rules (IFR) or mountain obscuration.
  - Ceilings less than 1,000 feet and/or visibility less than 3 miles affecting over 50 percent of the area, and
  - Extensive mountain obscuration.
- b) Turbulence.
  - Moderate, and
  - Sustained surface winds of greater than 30 knots.
- c) Icing.
  - Moderate, and
  - Freezing level reports.

**4) Volcanic Ash Advisories (VAA).** The VAAC monitors volcanic ash plumes via satellite imagery, initiates computer trajectory/dispersion modeling, and issues VAAs. Information regarding the VAAC can be found via the National Oceanic and Atmospheric Administration's (NOAA) VAAC. The Web site for the two U.S. VAACs in Washington, DC, and Anchorage, AK, can be found at <http://www.ssd.noaa.gov/VAAC> and <http://vaac.arh.noaa.gov>.

**5) Aviation Tropical Cyclone Advisory (TCA).** Tropical Cyclone Advisory Centers (TCAC) are located worldwide and provide forecasts for tropical cyclones (i.e., tropical storms, typhoons, hurricanes, and cyclones). There are two TCACs in the United States: one in Miami, FL, and one in Honolulu, HI. These TCACs monitor portions of the Atlantic and Pacific oceans. Additional information regarding TCACs can be found at the following sources:

- Information regarding worldwide TCACs can be found at <http://www.nhc.noaa.gov/aboutrsmc.shtml>.
- Eastern Pacific and Atlantic tropical cyclone information is available at <http://www.nhc.noaa.gov>.
- Central Pacific tropical cyclone information is available at <http://www.prh.noaa.gov/hnl/cphc>.

- Western Pacific tropical cyclone information is available at <http://www.cpc.ncep.noaa.gov/products/fews/CYCLONES/wpacific.shtml>.

**6) Space Weather Alerts, Warnings, and Watches.** The NOAA/NWS Space Weather Prediction Center provides alerts, warnings, and watches for solar storm events (known as space weather) that could have an impact on navigation and communication capabilities.

**7) PIREPs.** Pilots may report, and the Air Traffic Organization (ATO) may solicit reports of, severe weather phenomena such as:

- Ceilings at or below 5,000 feet,
- Thunderstorms and related phenomenon,
- Moderate or greater turbulence,
- Icing,
- Wind shear, and
- Volcanic ash.

**8) Aircraft Reports (AIREP).** AIREPs are messages from an aircraft to a ground station. AIREPs are normally comprised of the aircraft's position, time, flight level (FL), estimated time of arrival (ETA) over its next reporting point, destination ETA, fuel remaining, and meteorological information (METI). AIREPs can also include information regarding adverse weather phenomena such as:

- Moderate to severe turbulence,
- Icing conditions,
- Supplementary information such as freezing rain, snow, funnel clouds, etc., and
- Operationally significant weather radar echoes.

**9) METARs and SPECIs.** These surface reports may contain important information regarding adverse weather phenomena at an airport or in its vicinity.

**F. Aviation Weather Forecasts.** Forecasts are predictions of the development and/or movement of weather phenomena based on surface and satellite observations, reports of adverse weather phenomena, and various mathematical models. Examples of aviation weather forecasts include, but are not limited to:

- Terminal Aerodrome Forecast (TAF),
- Area forecast,
- SIGMET,
- Convective SIGMETs,
- AIRMET,
- VAA, and
- TCAs (issued for U.S. oceanic flight information region (FIR) and international FIRs).

**3-2073 REGULATORY SOURCES OF WEATHER REPORTS—PARTS 91K, 121, AND 135.** Title 14 CFR generally requires certificate holders and program managers to use weather reports and forecasts prepared by the NWS, a source approved by the NWS, or a source approved by the Administrator.

**A. Weather Reports Prepared by the NWS or a Source Approved by the NWS.**

Parts 91K, 121, and 135 certificate holders and program managers are required by regulation to use weather reports prepared by, and weather facilities operated by, the NWS or a source approved by the NWS. As previously stated in Volume 3, Chapter 26, Section 1, sources approved by the NWS are approved and/or maintained in collaboration with the FAA. In accordance with the current edition of FAA Order 7000.2, FAA/NOAA Memorandum of Agreement, the FAA and NWS share the responsibility for management of the aviation surface weather observing program. In accordance with the Memorandum of Understanding (MOU) found in FAA Order 7000.2, sources approved and/or maintained by the FAA, in collaboration with the NWS, are as follows:

**1) Automated Surface Observing System (ASOS) and Automated Weather Observing System (AWOS).** An ASOS or AWOS supplies an automated surface weather observation. ASOS and AWOS observations in METAR and SPECI formats are transmitted electronically to the NWS where they are processed (conversion to international units) and retransmitted worldwide. The NWS requires METAR and SPECI for the generation of the TAFs. The NWS commissions ASOS systems, and the FAA commissions AWOS sites. The AWOS, though not approved directly by the NWS, are approved by agreement and in collaboration with the NWS. The FAA follows the NWS commissioning and installation guidelines:

- a) ASOS. All ASOS are automatically NWS/FAA approved weather sources.
- b) AWOS-3 (or better). All AWOS-3 (or better) are automatically FAA/NWS approved weather sources. AWOS systems below the AWOS-3 level are not FAA/NWS approved weather sources, with the exception of an AWOS-2, which is approved for limited use (see subparagraph c) below).
- c) AWOS-2. AWOS-2 is approved for limited use only. An AWOS-2 does not report ceiling information; therefore, an AWOS-2 is not an NWS/FAA approved weather source and is for use under the following circumstances:
  1. IFR operations that require ceiling information are prohibited at airports where AWOS-2 reports are the only official source of weather information.
  2. Terminal visual flight rules (VFR) operations are prohibited at airports at which an AWOS-2 is the only official source of weather information.
  3. An Airport at which an AWOS-2 is used solely as the official source of weather information is prohibited for use as an alternate airport.
  4. At airports where ceiling information is required to comply with nonstandard takeoff minimums dictated by 14 CFR part 97 or OpSpecs, IFR takeoffs are prohibited if an AWOS-2 is the sole source of weather information.

**2) Supplementary Aviation Weather Reporting System (SAWRS).** A SAWRS may be used as a stand-alone observation or as a backup to an automated system such as an AWOS or ASOS. A SAWRS observer is usually an employee of the certificate holder or program manager who provides weather information at a particular station (typically an airport or heliport). Each SAWRS observer must be approved by the NWS to complete weather observations at a particular station. Under the SAWRS program, an observer may augment an automated weather system by providing specific elements (e.g., temperature) of a weather report, or an observer may provide an entire METAR (report), depending on the need.

**3) Limited Aviation Weather Reporting Stations (LAWRS).** LAWRS are stations (typically airports) where aviation weather observations are provided by air traffic control (ATC) tower personnel.

**B. Accessing International Weather Information via the NWS.** The NWS provides weather, hydrologic, and climate forecasts and warnings for the United States, its territories, adjacent waters, and ocean areas. The NWS (as part of NOAA) also provides access to international weather information via the Internet. The Internet information can be accessed via the NOAA or NWS Web sites, or via the NOAA/NWS Aviation Digital Data Service (Aviation Weather Center). Weather information for international locations outside of NWS' jurisdiction is not actually generated by the NWS. Rather, it is generated by internationally recognized weather sources such as members of the World Meteorological Organization (WMO) or meteorological offices operated by International Civil Aviation Organization (ICAO) member states. While these sources may be recognized by the NWS and accessed through the NWS, they are not actually approved by the NWS and therefore don't meet regulatory requirements as a source approved by the NWS. Certificate holders and program managers may still use weather information provided by these internationally recognized sources, provided those sources are approved by the Administrator in the certificate holder's/program manager's OpSpecs/MSpecs. In order to approve one of these weather sources on behalf of the Administrator, POIs must follow the guidance contained in subparagraph 3-2073C, and paragraphs 3-2074, and 3-2075 of this section.

### **C. Weather Reports Prepared by a Source Approved by the Administrator.**

**1) General.** In many cases, 14 CFR allows a certificate holder or program manager to use weather reports prepared by a source approved by the Administrator (see also Volume 3, Chapter 26, Section 1). For part 121 operations, weather reports must be available to the flightcrew as well as the dispatcher (domestic and flag operations), or the person authorized to exercise operational control (supplemental operations). Upon granting his or her approval (as a representative of the Administrator) to use a particular source for weather reports, POIs will list the source in a certificate holder's or program manager's OpSpec/MSpec A010. Title 14 CFR does not stipulate what particular sources of weather reports the Administrator (or the POI on behalf of the Administrator) may approve; however, it is FAA policy that POIs may automatically approve the following sources as a representative of the Administrator:

- The NWS for those United States and its territories located outside of the 48 contiguous States,

- U.S. and North Atlantic Treaty Organization (NATO) military observing sources,
- Meteorological offices operated by ICAO member states,
- ICAO member state, authorized meteorological station or automated observation, and
- Members of the WMO.

**2) Surface Weather Reports Prepared by Sources Other Than the NWS.** It is FAA policy that wherever NWS reports are available, certificate holders/program managers must use these reports to control flight operations. Where NWS reports are not available, POIs may approve any of the sources listed in subparagraph 3-2073C, provided the reports prepared by that source contain all of the required elements of a surface weather report. (See subparagraph 3-2072D.)

**3) Reports of Adverse Weather Phenomena.** POIs may automatically approve the use of reports of adverse weather phenomena prepared by the following sources:

- The NWS or a source approved by the NWS (within the 48 contiguous United States and the District of Columbia),
- The NWS for those United States and its territories located outside of the 48 contiguous States,
- U.S. and NATO military observing sources,
- Meteorological offices operated by ICAO member states,
- ICAO member state, authorized meteorological station, or automated observation,
- Members of the WMO,
- PIREPs provided by aircraft of the same or similar type and size, and
- AIREPs provided by aircraft of the same or similar type and size.

**4) Alternate Sources of Weather Reports Approvable by a POI.** If a certificate holder or program manager identifies a need to use a weather source other than what is listed in subparagraph 3-2073A or 3-2073C1), C2), or C3), POIs may approve an alternate source of weather reports if the certificate holder or program manager develops and maintains an FAA-approved EWINS. An EWINS is a system of gathering, evaluating, and disseminating aviation weather information and issuing weather reports or forecasts prepared by properly trained and qualified aviation meteorologists or aircraft dispatchers. An EWINS must base weather forecasts on the weather reports issued by sources allowable by regulation, or approved by the Administrator (depending on where a flight is conducted). EWINS are discussed in greater detail in Volume 3, Chapter 26, Section 4. Guidance on approving an EWINS as a weather source in OpSpec/MSpec A010 is contained in Volume 3, Chapter 18. An EWINS is generally optional; however, if a certificate holder/program manager who does not have an EWINS desires to use weather sources other than the ones listed in subparagraphs 3-2073A and 3-2073C1), C2), or C3), the POI must obtain prior approval in writing from the manager of the Air Transportation Division (AFS-200). AFS-200 will grant approval if the certificate holder/program manager demonstrates an equivalent or greater level of safety to an EWINS.

Instructions on obtaining headquarters (HQ) approval are contained in paragraph 3-2075 of this section.

### **5) Weather Reports—Special Consideration for Part 135 Operations.**

a) VFR. In accordance with § 135.213(a), if the NWS or other approved weather reports are not available for VFR operations, a pilot in command (PIC) may use weather information based on his or her own weather observation or on the observations of other competent persons.

b) IFR. In accordance with § 135.213(b), weather observations made and furnished to pilots conducting IFR operations at an airport must be obtained at the airport where those IFR operations are conducted. There is also a provision contained in § 135.213(b) that could allow a pilot to use a weather observation taken at a location other than the one at which an IFR operation is being conducted; however, POIs may not approve this provision unless the NWS and the certificate-holding district office (CHDO) find that “the standards of safety for that operation would allow a deviation from the requirement to have the observation taken at the airport at which the IFR operation is being conducted.” In other words, using a weather report from the proposed alternate location must provide an equivalent or greater level of safety. In order to approve such a deviation, the POI must select the deviation in the Web-based Operations Safety System (WebOPSS) and add it to the certificate holder’s OpSpec A005, Exemptions and Deviations, and add the appropriate conditions and limitations. The POI will specify which locations (airport, seaport, etc.) the deviation may be applied to, and under what conditions, by adding nonstandard language to the part 135 certificate holder’s OpSpec A010. All nonstandard text (provisions) to OpSpec A010 must be approved by AFS-200. See Volume 3, Chapter 18, Section 2 for guidance on obtaining HQ approval for nonstandard authorizations.

### **3-2074 REGULATORY SOURCES OF WEATHER FORECASTS.**

**A. Weather Forecasts—Part 91K Operations.** Part 91K does not contain specific regulatory requirements governing a part 91K program manager’s use of weather forecasts to control flight operations; however, there are regulatory requirements contained in § 91.1039 for pilots operating program aircraft under IFR to use weather reports prepared by the NWS, a source approved by the NWS, or a source approved by the Administrator. Also, Volume 3 Chapter 26, Section 1 outlines certain regulatory requirements for part 91K program managers that indicate a need to have a method of obtaining forecasts (and reports) of adverse weather phenomena. It is therefore FAA policy that part 91K program managers and pilots operating program aircraft under IFR only use forecasts prepared from weather reports issued by the sources outlined in subparagraphs 3-2073A and 3-2073C.

**B. Weather Forecasts—Part 121 Domestic and Flag Operations Inside the 48 Contiguous United States and the District of Columbia.** In accordance with § 121.101(c), a certificate holder conducting domestic and flag operations may only use forecasts to control flight movements (operations) within the 48 contiguous United States and the District of Columbia if those forecasts are prepared using the following:

- Weather reports issued by the NWS or a source approved by the NWS (§ 121.101(b)(1)). The sources approved by the NWS can be found in subparagraph 3-2073A.
- A source approved in a certificate holder's FAA-approved system of obtaining forecasts and reports of adverse weather phenomena (§ 121.101(d)). Approved sources of reports of adverse weather phenomena are contained in subparagraph 3-2073C. These same sources are approvable for weather forecasts, with the exception of PIREPs and AIREPs.

**C. Weather Forecasts—Part 121 Domestic and Flag Operations Outside the 48 Contiguous United States and the District of Columbia.** In accordance with § 121.101(c), a certificate holder conducting domestic and flag operations may only use forecasts to control flight operations outside the 48 contiguous United States and the District of Columbia if those forecasts are prepared using the following:

- Weather reports issued by a source approved by the Administrator (§ 121.101(b)(2)). Weather sources approved by the Administrator are contained in subparagraph 3-2073C.
- Any source approved in a certificate holder's FAA-approved system of obtaining forecasts and reports of adverse weather phenomena (§ 121.101(d)). Approved sources of adverse weather phenomena are contained in subparagraph 3-2073C.

**D. Weather Forecasts—Part 121 Supplemental Operations Inside the United States.** In accordance with § 121.119(b), a certificate holder conducting supplemental operations inside the United States may only use a forecast to control flight movements (operations) if that forecast was prepared from weather reports issued by the NWS or a source approved by the NWS. The sources approved by the NWS can be found in subparagraph 3-2073A.

**E. Weather Forecasts—Part 121 Supplemental Operations Outside the United States or at U.S. Military Airports.** In accordance with § 121.119(b), a certificate holder conducting supplemental operations may only use forecasts to control flight operations outside the United States or at U.S. Military airports if those forecasts are prepared from the reports issued by a source approved by the Administrator (§ 121.119(a)). Approved sources of weather reports are contained in subparagraph 3-2073C.

**F. Weather Forecasts—Part 135 Operations.** Section 135.213 generally requires a certificate holder conducting part 135 operations to use a weather forecast that was prepared by the NWS, a source approved by the NWS, or a source approved by the Administrator. See subparagraphs 3-2073A and 3-2073C for a list of regulatory sources and those approved by the Administrator.

**3-2075 WEATHER SOURCES REQUIRING PRIOR APPROVAL FROM AFS-200.** With approval from the POI, a certificate holder/program manager may use a weather source listed in paragraphs 3-2073 and 3-2074, or it may have an FAA-approved EWINS in lieu of using one of those sources. Using any other weather source without an EWINS requires approval from AFS-200. In order to obtain approval from AFS-200, a certificate holder/program manager must

be able to demonstrate an equivalent or greater level of safety to what would be provided by an EWINS. The process for obtaining AFS-200 approval is as follows:

**A. The Certificate Holder/Program Manager Makes the Request to the CHDO.** A certificate holder/program manager will request approval from the POI to use a weather source that would otherwise require an EWINS. The certificate holder must be able to show that using the weather source without having an EWINS provides an equivalent or greater level of safety.

**B. The CHDO Requests Approval from AFS-200 through the Regional Flight Standards Division (RFSD).** The POI will review the certificate holder's request. If the POI approves of the request, she/he will prepare a memo from the CHDO (certificate management office (CMO), Flight Standards District Office (FSDO), etc.) manager to the manager of AFS-200, through the manager of the RFSD. The memo must state that the POI initially approves of the certificate holder's request and that the CHDO is requesting approval from AFS-200 to issue the approval through a nonstandard text authorization to OpSpec/MSpec A010. Specifically, the CHDO will request approval to issue a nonstandard text authorization, allowing the certificate holder/program manager to use a weather source other than one listed in paragraphs 3-2073 and 3-2074, without having an EWINS. All nonstandard text authorizations must provide an equivalent or greater level of safety to what is otherwise provided in the standard OpSpec text. POIs must review Volume 3, Chapter 18, Section 2, paragraphs 3-712 and 3-713 for further direction on nonstandard text OpSpec authorizations. (POIs should also review Volume 3, Chapter 1, Section 1, which outlines the FAA's general process for approval.) In addition to stating the POI's initial approval, the memo requesting AFS-200's approval must include the CHDO manager's recommendation to AFS-200 to approve the request, along with the manager's rationale for the recommendation. When requesting such approval, the CHDO must provide AFS-200 with information that shows that an equivalent or greater level of safety is provided. The minimum required information that the CHDO must provide to AFS-200 is as follows:

**1) The Name of the Weather Source (Provider).** Provide the name of the weather source (e.g., the certificate holder, a vendor, or other entity).

**2) The Reason for the Need to use the Weather Provider.** Provide the reason for the need to use the weather source. For example, NWS information that is not available at the station.

**3) The Equivalent or Greater Level of Safety.** Provide a detailed description of the equivalent or greater level of safety provided by using the particular weather provider without having an EWINS.

**4) The Method of Dissemination.** Provide information on how the certificate holder/program manager proposes to obtain and disseminate the weather report or forecast (e.g., through their dispatch or flight following system, via the Internet, or by voice).

**5) Certificate Holder's Training Program.** Provide a copy of the portion of the certificate holder's/program manager's training program for flightcrew members, dispatchers, or

persons authorized to exercise operational control that contains instruction on the use of the weather report or forecast prepared by the weather source.

**6) Weather Provider's Training Program.** Provide a copy of the training program for weather provider personnel that will be involved in generating weather reports or forecasts for the certificate holder.

**7) The Weather Provider's Personnel Qualifications.** Provide information that shows that the personnel who will be generating the weather information for the certificate holder, have qualifications that meet or exceed those contained in Volume 3, Chapter 26, Section 4, subparagraph 3-2124A.

**8) For Weather Reports.** In addition to the requirements of subparagraphs 3-2075 A1) through A5) above, provide the following information:

- The location(s) at which the certificate holder/program manager intends to use the weather report;
- The elements that will be reported (e.g., temperature, visibility, wind direction, and wind speed; see Volume 3, Chapter 26, Section 1 or subparagraph 3-2072D for a full list of required elements contained in a weather report); and
- The method the certificate holder or program manager proposes for maintaining or ensuring the maintenance (to certificated standards) of the weather-sensing equipment used in generating the weather report.

NOTE: POIs should be prepared to submit additional information to AFS-200 upon request.

**C. The RFSD Forwards the Request to AFS-200.** If the RFSD manager concurs with the CHDO's request and recommendation, the RFSD may forward the entire request to AFS-200. The RFSD will include a memo that contains the RFSD manager's concurrence and recommendation and attach it to the memo from the CHDO. AFS-200 will not consider the request without the concurrence and recommendation memo from the RFSD manager.

**D. AFS-200 Action.** AFS-200 will review all of the documentation forwarded by the CHDO through the RFSD and determine if it presents an equivalent or greater level of safety to an EWINS. If AFS-200 determines that an equivalent or greater level is presented, AFS-200 will provide approval by memo to issue the nonstandard text authorization to OpSpec/MSpec A010. AFS-200 will also provide the specific text for the authorization. AFS-200 may send notification of the approval to the principal inspector (PI)/CHDO/RFSD via email.

**3-2076 USE OF COMMERCIAL WEATHER PRODUCTS.** This paragraph discusses a certificate holder's or program manager's use of commercial weather products and vendors as a means of compliance with 14 CFR.

**A. Commercial Weather Information Providers (CWIP).** A CWIP typically provides the weather reports and forecasts required by regulation for certificate holders and program managers conducting parts 91K, 121, and 135 operations.

**1) Repackaged Weather Information.** Repackaged weather information provided by a CWIP is simply the retransmission of weather information provided by the NWS, a source approved by the NWS, or a source approved by the Administrator, such as a member of the WMO (see subparagraph 3-2073C). A CWIP will often format an existing weather report or forecast without making any material changes to the weather information itself. This is commonly known as “repackaging.” Repackaging is often done as part of a certificate holder’s/program manager’s dispatch, flight following, and/or operational control system. For example, a CWIP will format (repackage) a report issued by the NWS so that it conforms to and works with a certificate holder’s information technology (IT) systems, such as those used for flight planning. Any time a CWIP alters the weather information itself (e.g., anything other than editorial changes to formatting), it cannot be considered repackaging.

a) POIs do not need to list (approve) a CWIP who provides purely repackaged weather information in a certificate holder’s/program manager’s OpSpecs/MSpecs. However, the source of the weather information provided by the CWIP must be listed. POIs must be able to positively determine that a CWIP is only repackaging information provided by a source specified by regulation or otherwise approved by the Administrator in OpSpec/MSpec A010. If a CWIP provides anything other than a purely repackaged weather product that was generated by a regulatory and/or approved weather source, then the certificate holder/program manager must have an EWINS, unless otherwise approved by AFS-200. (See subparagraphs 3-2073C4) and 3-2076A2)).

b) POIs of program managers conducting part 91K operations should encourage the program manager to describe the use of CWIPs in its operations manual if the CWIP provides the weather information required by the procedures described in § 91.1025(n) and/or § 91.1025(o).

c) Part 121 certificate holders who use repackaged weather information provided by a CWIP as part of their dispatch, flight following, and/or operational control system must describe the process in accordance with §§ 121.135(b)(4) and 121.135(b)(15). POIs of these certificate holders must ensure that the certificate holder’s manual adequately describes the use of CWIPs who provide repackaged weather information.

d) POIs of part 135 certificate holders who operate turbine-powered large transport category aircraft (refer to § 135.385) should require the certificate holder to describe the use of CWIPs in its operations manual if the CWIP provides weather information required by § 135.23(r).

**2) Weather Information Prepared by a CWIP.** Certificate holders and program managers have the option of using weather reports or forecasts that are specifically prepared by a CWIP. POIs may approve a certificate holder/program manager to use weather information prepared by a CWIP if the certificate holder/program manager has an FAA-approved EWINS or if otherwise approved by AFS-200. See subparagraph 3-2073C4) and paragraph 3-2075. It’s

important to note that in order to comply with 14 CFR, CWIP-generated forecasts must be prepared from the weather reports issued by the sources allowable by §§ 91.1039, 121.101, 121.119, and 135.213, as applicable. These sources are also outlined in subparagraphs 3-2073A and C.

**B. Accessing Weather Information via the Public Internet.** Certificate holders and program managers often access weather information via the public Internet. When accessing weather information this way, certificate holders and program managers are required to use weather information that is provided by a weather source authorized by regulation, or approved by the Administrator, and is listed in the certificate holders'/program managers' OpSpecs/MSpecs. In the past, the FAA maintained a list of approved QICP. However, the FAA no longer approves QICPs. The FAA has canceled AC 00-62, Internet Communications of Aviation Weather and NOTAMS, and no longer maintains a list of approved QICPs. Certificate holders and program managers using the public Internet to access weather information are responsible for ensuring accurate and timely delivery of information without data corruption during the transmission.

**3-2077 AVIATION WEATHER INFORMATION SYSTEMS.** Aviation weather information systems are typically used by certificate holders and program managers as an integral part of their flight dispatch, flight following, or operational control systems to obtain (through data or satellite communication) aviation weather information from authorized and approved weather sources. This information is then disseminated to flightcrews, dispatchers, and persons authorized to exercise operational control. Some aviation weather information systems may be stand-alone briefing systems that are not necessarily integrated into a certificate holder's or program manager's dispatch, flight following, or operational control system. Whether stand-alone or integrated, certificate holders and program managers who use aviation weather information systems as a means of obtaining and disseminating weather information required by regulation must ensure that these systems are able to do so rapidly, accurately, and in a format that is operationally suitable. Aviation weather information systems include the equipment and personnel necessary to collect, process, and disseminate weather reports and forecasts. Whether through the use of an aviation weather information system or other means of obtaining aviation weather information, certificate holders and program managers are required at all times to meet the regulatory requirements for weather contained in 14 CFR.

**A. Capabilities.** An aviation weather information system should have adequate equipment and procedures for obtaining and distributing operational weather information to flightcrews, dispatchers, and persons authorized to exercise operational control. Aviation weather information systems should provide METI to meet the pertinent regulatory requirements for all phases of flight.

- Preflight planning,
- Departure,
- En route, and
- Arrival.

**1) Preflight Planning.** For preflight planning purposes, an aviation weather information system should provide enough information for flightcrews, dispatchers, and persons

authorized to exercise operational control to become thoroughly familiar with current reported and forecasted weather conditions along the entire route of flight, which includes the origin airport, the airports along the route, the destination, and any alternate airports.

**2) Departure.** For the departure phase of a flight, an aviation weather information system should provide current and forecast information to flightcrews, dispatchers, and persons authorized to exercise operational control that is specific to the conditions at the departure airport and departure (takeoff) alternate (when required by § 91.1039(d), § 121.617, or § 135.217). The information provided must include surface observations (METARs) and field condition reports (when issued). Field condition reports are typically issued as Notices to Airmen (NOTAM) and are depicted as “field condition” (FICON).

**3) En Route.** While a flight is en route, an aviation weather information system should continuously update actual weather information to flightcrews, dispatchers, and persons authorized to exercise operational control. Significant changes in current or forecast conditions, such as the location, intensity, and movement of the weather phenomena, must be available to ensure the continued safety of flight. Each aviation weather information system should provide at least the following information while a flight is en route.

- a) Current areas of adverse weather phenomena (such as thunderstorms, turbulence, and heavy weather radar returns),
- b) Hazardous conditions such as volcanic ash,
- c) Current reports and forecasts of winds and temperatures aloft,
- d) Current reports and forecasts of destination and alternate airport weather,
- e) Continual updates to weather and hazard advisories such as SIGMETs, convective SIGMETs, AIRMETS, VAAs, and PIREPS, and
- f) Aviation weather information systems that support flight operations above 18,000 feet should also provide the following information:
  - High-level severe weather information (clear air turbulence),
  - Tropopause height information, and
  - High-level (500-175 millibar (mb)) Significant Weather (SIGWX) forecasts.

**4) Arrival.** For the arrival phase of flight, an aviation weather information system should provide current and forecast weather information and FICON reports (when issued) to flightcrews, dispatchers, and persons authorized to exercise operational control that is specific to the conditions at the destination airport and designated alternate airport(s) (when required by § 91.1039(b), § 121.619, § 121.621, § 121.623, § 121.624, or § 135.223).

**5) All Phases of Flight.** For all phases of flight (preflight planning, departure, en route, and arrival), an aviation weather information system should provide flightcrews,

dispatchers, and persons authorized to exercise operational control with at least the following weather information:

- Weather reports and forecasts for departure, destination, and alternate airports;
- Weather reports and forecasts for airports along the route of flight;
- Forecast winds and temperatures aloft for all route segments at planned cruising altitudes;
- Surface observations for departure, destination, alternate, and diversionary airports;
- NOTAMs for departure, destination, alternate, and diversionary airports, and navigational facilities;
- Area forecasts;
- Information to determine the Density Altitude (DA) at airports where takeoff and landing will occur;
- Hazards and adverse weather phenomena en route such as thunderstorms, turbulence, wind shear, icing, and volcanic ash;
- Severe weather cloud types such as cumulonimbus clouds (Cb) and standing lenticular (SL);
- Tropical cyclone data (tropical storm, typhoon, hurricane, and cyclone); and
- Continual updates to weather and hazard advisories such as SIGMETs, convective SIGMETs, AIRMETS, VAAs, and PIREPS.

**B. Weather Briefing Documents (Weather Package).** Initial dissemination of weather information obtained from an aviation weather information system is typically provided to the flightcrew by a dispatcher or person authorized to exercise operational control via a weather or briefing document. This document is often referred to as a weather package. Certificate holders and program managers typically use a weather package (or similar briefing document) to provide flightcrews with weather information required by regulation, and to provide situational awareness. Therefore, the FAA recommends, and POIs should encourage, certificate holders and program managers to include at least the following information in a weather package or similar briefing document:

**1) All Flights.**

- Weather reports and forecasts for the origin, destination, and alternate airports;
- Weather reports and forecasts for airports located along the route of flight;
- FICON reports, when issued, at the origin, destination, and alternate airports;
- Winds aloft if not included in the flight plan;
- PIREPS; and
- AIRMETS, SIGMETs, convective SIGMETs, and VAAs (when in effect) for the entire route of flight.

**2) Oceanic Flights.** In addition to the weather required for all flights in subparagraph 3-2077B1) above, the following additional information should be provided to flightcrews in the weather package for all oceanic flights.

- High-level SIGWX charts;
- Upper wind mb charts;
- Lower-level wind charts for equal time points (ETP) (when designated);
- Weather reports and forecasts for ETP airports (when designated); and
- Tropopause height and jetstream location.

**3) Extended Operations (ETOPS).** In addition to the weather required for all flights and oceanic flights in subparagraphs 3-2077B1) and 2) above, the following additional information is required for ETOPS and should be included in a weather package for an ETOPS flight:

- Wind and icing conditions at 10,000 feet mean sea level (MSL), and
- Weather reports and forecasts for en route alternates.

**4) Polar Operations.** The Polar Regions as defined in OpSpec B050, Authorized Areas of En route Operations, Limitations, and Provisions, are as follows:

- The North Polar Area of operations is located north of 78 degrees north latitude to the North Pole, and
- The South Polar Area is located 67 degrees south latitude to the South Pole (inclusive).

NOTE: Flight operations in this area can be affected by sunspot activity (space weather), which can have a negative effect on aircraft communications, particularly those that are conducted via high frequency (HF) radio and certain satellite-based navigation systems. Certificate holders/program managers who are authorized to conduct north and/or south polar operations must provide flightcrews with information regarding sunspot/solar flare activity. Therefore, this information should be included in a weather package for a flight involved in north and/or south polar operations.

**5) Helicopter Remote Site Operations.** Helicopter operations at remote sites may require special METI. The extent of special weather information needed for a particular operation depends on the type of operation and the operating environment. High DA, high winds, and icing conditions can be critical factors in helicopter operations, particularly when helicopters are required to hover out of ground effect or to make downwind or crosswind takeoffs or landings. In addition to weather information ordinarily required for helicopter operations, the following weather information is required for remote site operations and should be included in a weather package for helicopter remote site operations:

- a) Operations to high-elevation operating sites:
  - Mountain waves,
  - Low-level wind shear,
  - Strong surface winds (20 knots or greater),
  - Moderate turbulence, and
  - Surface temperature (for DA computations).

b) Offshore operations:

- Wave heights (for single-engine operations or IFR helicopter operations using Airborne Radar Approach (ARA) procedures or offshore standard approach procedures (OSAP),
- Strong surface winds (20 knots or greater), and
- Fog conditions.

**6) Valid and Pertinent Information.** A weather briefing document should only contain valid and pertinent weather information. Weather information that is no longer valid should not be included in a weather package unless the information provides data relevant to establishing a trend.

**7) En Route Navigation Facilities and NOTAMs.** Although not technically weather, information contained in NOTAMs, such as the operational availability of en route navigation facilities, must be provided to the flightcrew. FICON NOTAMs are particularly important when issued, as they provide runway contamination information. It is a common practice for certificate holders/program managers to include NOTAMs as part of the weather package.

**8) Retention of the Weather Package.**

a) Part 121 Domestic and Flag Operations. Section 121.687(b) requires the dispatch release to contain or have attached to it weather reports and weather forecasts for the destination, intermediate stops, and alternate airports that are the latest at the time the release is signed by the PIC and dispatcher. This means that a weather briefing document is actually part of the dispatch release. As such, the briefing document (weather package) must be retained with the dispatch release in accordance with § 121.695.

b) Part 121 Supplemental Operations. Section 121.689(b) requires the flight release to contain or have attached to it weather reports and weather forecasts for the destination and alternate airports that are the latest at the time the release is signed. Similar to domestic and flag operations, the weather package is considered to be part of the flight release and so must be retained in accordance with § 121.697.

**RESERVED.** Paragraphs 3-2078 through 3-2090.

**VOLUME 3 GENERAL TECHNICAL ADMINISTRATION**  
**CHAPTER 27 GROUND-DEICING/ANTI-ICING PROGRAMS**

**Section 1 General**

**3-2166 BACKGROUND.** Section 1 of this chapter contains background information on ground-deicing/anti-icing of aircraft. Section 2 provides policy, direction, and guidance to Federal Aviation Administration (FAA) inspectors for evaluation and approval of operator procedures. Volume 6, Chapter 2, Section 15, of this handbook covers ground-deicing/anti-icing surveillance procedures.

**A. Requirements.** There are essential differences in the ground-deicing/anti-icing requirements of Title 14 of the Code of Federal Regulations (14 CFR) parts 121, 125, and 135. For example, part 121 requires a complete deicing/anti-icing program that includes the training and testing of all personnel involved in the ground-deicing/anti-icing process. On the other hand, part 135 requires training and testing for pilots only. Additionally, if a part 135 operator chooses to use personnel other than pilots to assist in the ground-deicing/anti-icing and verification process, then those individuals must receive adequate and appropriate training. Part 125 requires testing for pilots only; however, other personnel involved in the deicing/anti-icing process must receive adequate and appropriate training.

**B. Deicing/Anti-icing Program.** Parts 125 and 135 operators have the option to elect to meet the deicing/anti-icing requirements of part 121, § 121.629(c) and institute a full deicing/anti-icing program. Recognizing that most inspectors will be required to inspect a variety of aircraft and operators, this chapter will attempt to present the differences in a meaningful manner. The inspector should become thoroughly familiar with the differences and requirements in 14 CFR covering operations in icing conditions.

**3-2167 RULE.** The current regulations in parts 121, 125, and 135 prohibit a takeoff when frost, ice, or snow (contamination) is adhering to the wings, control surfaces, or propellers of an airplane (see § 121.629(b), part 125, § 125.221(a), and part 135, § 135.227(a)). Traditionally, the pilot in command (PIC) has been held responsible for ensuring that critical surfaces of the aircraft are free of adhering frozen contaminants before takeoff. By the winter of 1991, an analysis of air carrier accidents led the FAA to conclude that many PICs had not been provided with sufficient information to ensure that the aircraft is free of frost, ice, and snow. Part 121 was amended in November 1992, and parts 125 and 135 were amended in January 1994 to provide specific rules for operating (that is, taking off) in weather conditions when frost, ice, or snow could reasonably be expected to adhere to the aircraft (ground-icing conditions).

**3-2168 PART 121 GROUND-DEICING/ANTI-ICING.**

**A. General.** Section 121.629(b) prohibits takeoff when contamination is adhering to critical surfaces of an airplane or when takeoff would not be in compliance with § 121.629(c). The exception to that general rule is that the Administrator may approve takeoff with “frost under the wing in the area of the fuel tanks.” Section 121.629(c) requires a detailed, comprehensive, deicing/anti-icing program (part 121 ground-deicing program) if a certificate holder is going to operate “any time conditions are such that frost, ice, or snow may reasonably

be expected to adhere to the aircraft” (ground-icing conditions). Section 121.629(d) provides a means for a certificate holder to operate without a program as required in § 121.629(c). If the operator does not have an FAA-approved deicing/anti-icing program, § 121.629(c) prohibits an air carrier from “dispatch, release, or takeoff” of an aircraft in ground-icing conditions.

NOTE: Principal operations inspectors (POI) may refer to Advisory Circular (AC) 120-60, Ground Deicing and Anti-icing Program, for a detailed description of those elements that make up the program.

**B. Provisions and Exceptions.** An exception to the requirements for a complete deicing/anti-icing program is contained in § 121.629(d), which provides that an air carrier is not required to have an approved deicing/anti-icing program if an Outside-the-Aircraft Check (OTAC) is completed within 5 minutes prior to beginning the takeoff. An OTAC must be performed from outside the aircraft to ensure that “wings, control surfaces, and other critical surfaces are free of frost, ice, and snow” when the certificate holder is operating in ground-icing conditions. If a certificate holder chooses to operate in accordance with § 121.629(d), the requirement for an OTAC must be documented in its operations specifications (OpSpecs).

### **3-2169 PART 121 DEFINITIONS.**

**A. Pretakeoff Check.** A pretakeoff check is a check of the aircraft’s wings or representative aircraft surfaces for frost, ice, or snow within the aircraft’s holdover time (HOT). This check is required when the certificate holder operates (that is, intends to takeoff) in ground-icing conditions, the aircraft has been deiced/anti-iced, and a HOT is established. This check is accomplished within the HOT range and is normally accomplished by the flightcrew from inside the cockpit. The pretakeoff check requires the flightcrew to check the aircraft’s wings or representative aircraft surfaces for contamination as well as to assess the current weather or other situational conditions. The pretakeoff check is integral to the use of HOTs. If HOTs are used, at least one pretakeoff check must be performed.

#### **B. Pretakeoff Contamination Check.**

1) A pretakeoff contamination check is a check that the flightcrew and ground personnel conduct after the HOT has been exceeded to make sure that the wings, control surfaces, and other critical surfaces, as defined in the operator’s program, are free of frost, ice, and snow. The pretakeoff contamination check must be completed within 5 minutes before beginning the takeoff. Operators must have aircraft-specific procedures for use by flightcrew members and qualified ground personnel while conducting the check to ensure that the aircraft’s wings, control surfaces, and other critical surfaces remain free of frost, ice, or snow when a HOT has been exceeded.

2) The pretakeoff contamination check must be conducted from outside the aircraft for the following:

- Hard-wing airplanes with aft, fuselage-mounted, turbine-powered engines.

NOTE: The check for these airplanes must include a tactile check of selected portions of the wing-leading edges and the upper wing surfaces. Alternatives to a

tactile check may be approved only with concurrence of the manager of the Air Transportation Division (AFS-200).

- For all other airplanes, unless the operator shows that the check can be adequately accomplished from inside the airplane. POIs may refer to AC 120-60 for additional guidance.

**C. OTAC.** An OTAC is a check that must be accomplished from outside the aircraft. Section 121.629(d) requires an OTAC of a certificate holder who operates in ground-icing conditions without an approved part 121 ground-deicing/anti-icing program. For those operators without an approved program, any time frost, ice, or snow may reasonably be expected to adhere to the aircraft, an OTAC must be performed to ensure that the wings, control surfaces, and other critical surfaces are free of contamination. An OTAC must occur within 5 minutes prior to beginning the takeoff.

**D. HOT.** HOT is the estimated time deicing/anti-icing fluid will prevent the formation of frost or ice and the accumulation of snow on the treated surfaces of an aircraft. HOT begins when the final application of deicing/anti-icing fluid commences and expires when the deicing/anti-icing fluid applied to the aircraft loses its effectiveness.

**3-2170 PART 121 GROUND-DEICING/ANTI-ICING PROGRAM.** In order for the certificate holder to have an approved ground-deicing/anti-icing program that complies with § 121.629(c), each operator's ground-deicing/anti-icing program must cover the following four areas as described in AC 120-60:

- Management plan detailing operational responsibilities and procedures;
- Holdover timetables and procedures for their use;
- Procedures and responsibilities for aircraft ground-deicing/anti-icing, pretakeoff check, and pretakeoff contamination check procedures; and
- Initial and recurrent ground training and/or testing for flightcrew members and qualification for all other affected personnel, as applicable.

**3-2171 MANAGEMENT PLAN.** The operator should develop, implement, and use a management plan to ensure proper execution of its approved deicing/anti-icing program. The management plan should include operations and maintenance responsibilities and identify the management positions that are responsible for ensuring that all necessary elements of the deicing/anti-icing program are properly executed.

### **3-2172 HOLDOVER TIMETABLES AND THE PROCEDURES FOR THEIR USE.**

**A. Holdover Timetables.** Each operator is required to develop, and have available, holdover timetables for use by its personnel. In addition, each operator must make its holdover timetables available for use in the cockpit. These timetables are required to be supported by data acceptable to the Administrator. Currently, the only acceptable data are those developed by the Society of Automotive Engineers (SAE) and International Organization for Standardization (ISO). Aerospace Recommended Practice (ARP) 4737, Aircraft Deicing/Anti-icing Methods, and

ISO 11076, Aircraft Deicing/Anti-icing Methods on the Ground, contain the tables that are currently considered acceptable for use by the operators to develop their timetables.

NOTE: POIs may refer to AC 120-60 for additional guidance regarding the development of procedures for increasing or decreasing determined HOTs.

**B. Takeoff Within a HOT.** If takeoff is conducted within the HOT, § 121.629(c)(4) requires at least one pretakeoff check of the wings or representative surfaces to be completed by the flightcrew within the HOT range prior to the takeoff. Operator's manuals should contain detailed procedures regarding the use of the timetables in their operations. Section 121.629(c)(3) requires that the operator's program contain procedures for the flightcrew members to increase or decrease the determined HOT in changing weather conditions.

**C. Takeoff After the HOT Is Exceeded.** Under § 121.629(c), takeoff after the HOT is exceeded is permitted only if one or more of the following actions have been taken:

1) A pretakeoff contamination check is made to ensure that wings, control surfaces, and other critical surfaces, as defined in the certificate holder's program, are free of frost, ice, or snow.

2) It is otherwise determined by an alternative procedure, which was developed by the operator and approved by the FAA (for example, wing-icing sensors) that the wings, control surfaces, and other critical surfaces as defined in the certificate holder's program, are free of frost, ice, or snow.

3) The wings, control surfaces, and other critical surfaces have been redeiced and a new HOT has been established.

### **3-2173 PART 135 GROUND-DEICING/ANTI-ICING TRAINING AND CHECKING RULE.**

**A. General.** Section 135.227(a) prohibits a pilot from taking off in an aircraft that has "frost, ice, or snow adhering to any rotor blade, propeller, windshield, wing, stabilizing or control surface, to a powerplant installation, or to an airspeed, altimeter, rate of climb, or flight attitude instrument system..." As evident by the use of the term rotor blade, helicopters are subject to the regulation. There is one exception to the regulation: Section 135.227(a) allows that "takeoffs may be made with frost under the wing in the area of the fuel tanks if authorized by the Administrator."

**B. Provisions in Part 135 Ground-Deicing/Anti-icing Rule.** Section 135.227(b) requires pilot training in accordance with § 135.341 if a certificate holder is going to operate (that is, takeoff) "any time conditions are such that frost, ice, or snow may reasonably be expected to adhere to the airplane..." (ground-icing conditions). In addition to pilot training, § 135.227 requires a pretakeoff contamination check (see paragraph 3-2174). Therefore, if the certificate holder is operating in ground-icing conditions, it must have a pilot training program, which the pilot has completed, in accordance with § 135.341 and the pilot must conduct a pretakeoff contamination check. Exceptions to the regulation that requires a pretakeoff contamination check when operating in ground-icing conditions are as follows:

- 1) Administrator may approve an alternative procedure developed by the operator to ensure the wings and control surfaces are free of contamination (for example, wing-icing sensors); or
- 2) The operator may comply with the part 121 ground-deicing rule.

**C. Important Differences Between the Part 121 Ground-Deicing Rule and the Part 135 Ground-Deicing Rule.** When compared to the part 121 ground-deicing regulation, the part 135 ground-deicing rule differs in the following respects:

- 1) Only pilot training and checking is required to be conducted in accordance with § 135.345(b)(6)(iv).
- 2) The use of HOTs and holdover timetables when operators use deicing/anti-icing fluids is only advisory in the part 135 ground-deicing rule.
- 3) A pretakeoff contamination check must be performed whenever a part 135 certificate holder is operating in ground-icing conditions.

**3-2174 PRETAKEOFF CONTAMINATION CHECK.** A pretakeoff contamination check is a check to make sure the wings and control surfaces are free of frost, ice, or snow. Section 135.227 requires that a pretakeoff contamination check be completed within 5 minutes prior to beginning the takeoff. It may be accomplished from inside or outside the aircraft and may be visual, tactile, or a combination, as long as the check is adequate to ensure the absence of contamination. The operator's POI must approve the pretakeoff contamination check procedures for each specific type of aircraft operated by the certificate holder. Also, the operator's OpSpec A023 or A041, as applicable, must reference or describe the pretakeoff contamination check.

**3-2175 APPROVALS FOR PART 135 OPERATORS.** If a part 135 operator chooses to use a ground-deicing/anti-icing program (§ 121.629(c)), the POI will issue OpSpec A023 to approve that program. If a part 135 operator chooses not to use a ground-deicing/anti-icing program, the POI will issue OpSpec A042. The POI will authorize a pretakeoff contamination check by issuing OpSpec A041, in accordance with § 135.227 (see Volume 3, Chapter 18, Section 3).

### **3-2176 APPLICABILITY OF THE PART 135 GROUND-DEICING RULE.**

**A. Certificate Holder Who Does Not Operate in Ground-Icing Conditions.** The part 135 ground-deicing rule does not apply to a certificate holder who does not operate in ground-icing conditions. Under the regulation, ground-icing conditions exist any time weather conditions are such that frost, ice, or snow may reasonably be expected to adhere to the airplane. The certificate holder who does not operate in ground-icing conditions is not required to train its pilots or develop pretakeoff contamination procedures. Certificate holders who do not operate in ground-icing conditions must be issued OpSpec A042.

**B. Operators Who Use Only One Pilot in Their Operations.** Operators who use only one pilot in their operations (single-pilot operator) are not required to comply with the manual and approved training requirements of § 135.21 or § 135.341. Therefore, single-pilot operators

are not required to have an approved pilot training program nor the additional training required by the part 135 ground-deicing rule. However, single-pilot operators must comply with all the operational requirements of the part 135 ground-deicing rule. Those operational requirements include a pretakeoff contamination check or an approved alternative procedure to the pretakeoff contamination check described in its OpSpecs. The pilots of these types of operators will need to demonstrate knowledge to operate in ground-icing conditions during the initial and recurrent flight checks. A single-pilot operator will have an aircraft specific description of the pretakeoff contamination check in OpSpec A023 or A041, as applicable. If the operator does not operate in ground-icing conditions, OpSpec A042 must be so documented and issued.

**C. Helicopter Operations.** Helicopter operations conducted under part 135 are excluded from the additional training and pretakeoff contamination check requirements of the part 135 ground-deicing rule. However, the regulation requires helicopter operations to be conducted in accordance with the operating limitations of § 135.227.

### **3-2177 TRAINING REQUIREMENTS OF THE PART 135 GROUND-DEICING RULE.**

If an operator is required to have an approved training program, that training program must include pilot ground training relating to deicing and anti-icing operations required by § 135.345 for initial, transition, and upgrade training and by § 135.351 for recurrent training and testing. These training requirements must include procedures for operating airplanes during ground-icing conditions. The operator must provide that training to its pilots and all other participating personnel. The training must include at least the following elements:

**A. Use of HOTs.** In part 135 operations, HOTs are only advisory and serve as guidance to the pilot in making takeoff decisions. If the operator uses the deicing/anti-icing fluids, it must train its pilots in the use of HOTs.

**B. Airplane Deicing/Anti-icing Procedures.** Airplane deicing/anti-icing procedures include responsibilities, requirements, and inspections and check procedures for the pretakeoff contamination check or alternative procedures, as applicable.

**C. Communications.** The operator must provide training for all company personnel in communicating with all agencies involved in the deicing/anti-icing process and the decisionmaking process.

**D. Contamination.** Aircraft surface contamination training includes how to identify frost, ice, or snow, and how to locate critical areas. Training should include an explanation of how small amounts of surface contamination adversely affect aircraft performance and flight characteristics.

**E. Deicing/Anti-icing Fluids.** If the operator uses deicing/anti-icing fluids, it must train its pilots, as well as any other participating personnel, in the types and characteristics of deicing/anti-icing fluids.

NOTE: It is important that flightcrews do not use deicing/anti-icing fluids unless they have been trained in the characteristics and effects of these fluids on their operation.

**F. Cold Weather Preflight Inspection Procedures.** Training should include procedures for cold weather preflight inspections.

**G. Contamination Recognition.** This aspect of training should cover techniques for recognizing contamination on the aircraft for use during both the preflight inspection and the pretakeoff contamination check.

NOTE: All training should be aircraft specific. When an operator has different kinds of aircraft, any unique characteristics of these aircraft while operating in ground-icing conditions should be covered.

NOTE: Other than part 135 single-pilot operators, who must have the pretakeoff contamination check procedures described in their OpSpecs, both parts 121 and 135 operators must have documentation in their general manuals (GM) or flight manuals (fm) for the procedures they intend to use to comply with their respective deicing/anti-icing rule. These procedures may include descriptions of how and by whom the pretakeoff contamination check will be accomplished, and how the operator will comply with its approved deicing/anti-icing procedures. If an operator elects to not fly when frost, ice, or snow may reasonably be expected to adhere to the surface of an aircraft, that operator's manuals should contain specific guidance to that effect. This guidance should caution flightcrew members that this operator does not have deicing/anti-icing procedures in effect and does not authorize takeoff during ground-icing conditions.

NOTE: Inspectors should use this handbook section for background material when reviewing those sections of operator's manuals and procedures concerning ground-deicing/anti-icing.

**3-2178 SOURCES OF INFORMATION.** The following publications (current editions) may be useful to inspectors and operators for developing, reviewing, and approving a ground-deicing/anti-icing program.

**A. AC 20-117, Hazards Following Ground Deicing and Ground Operations in Conditions Conducive to Aircraft Icing.** This AC contains useful background information and also contains an extensive bibliography of related FAA and private sector publications, training materials, and other deicing/anti-icing or related information.

**B. AC 120-60, Ground Deicing and Anti-icing Program.** This AC contains information on how operators may develop acceptable ground-deicing/anti-icing programs to comply with § 121.629(c).

**C. AC 135-16, Ground Deicing & Anti-icing Training & Checking.** This AC contains information on how operators may develop acceptable ground-deicing/anti-icing programs to comply with § 135.227.

**D. AC 120-58, Pilot Guide Large Aircraft Ground Deicing.**

**E. SAE Publications.**

- Aerospace Material Specification (AMS) 1424, Deicing/Anti-Icing Fluid, Aircraft, SAE Type I.
- AMS 1428, Fluid, Aircraft Deicing/Anti-Icing, Non Newtonian (Pseudoplastic), SAE Types II, III, and IV.

**F. SAE ARP 4737.** This publication of the SAE contains holdover tables and information on how they are developed as well as information on the inspection of aircraft.

**G. ISO Publications.**

- ISO 11075, Aircraft Deicing/Anti-icing Fluids ISO Type I.
- ISO 11076, Aircraft Deicing/Anti-icing Methods on the Ground.
- ISO 11077, Aerospace Self Propelled Deicing/Anti-icing Vehicles Functional Requirements.
- ISO 11078, Aircraft Deicing/Anti-icing Fluids ISO Types II, III, and IV.

**H. Computer-Based Instruction (CBI) Programs.**

- Course 27019–Ground-deicing/Anti-icing for Airworthiness Inspectors.
- Course 27020–Ground-deicing/Anti-icing for Operations Inspectors.

**I. Winter Operations Guidance for Air Carriers.** This publication contains a number of ACs and articles relevant to the topic. Specific publications are listed here in case they need to be obtained and used separately:

- AC 20-73, Aircraft Ice Protection.
- AC 23.1419-2, Certification of Part 23 Airplanes for Flight in Icing Conditions.
- AC 65-15, Airframe and Powerplant Mechanics Airframe Handbook (see Chapter 7).
- AC 91-6, Water, Slush, and Snow on the Runway.
- AC 91-13, Cold Weather Operation of Aircraft.
- AC 135-9, FAR Part 135 Icing Limitations.
- “Winter Operations,” Douglas Aircraft Company.
- Air Carrier Operations Bulletin (ACOB) 7-81-1, Aircraft Deicing and Anti-icing Procedures.
- ACOB 7-82-2, Cold Weather Procedures.
- ACOB 8-83-1, Effects of Leading Edge Contamination on Aerodynamic Performance.
- ACOB 8-83-1, Turbojet Aircraft Engine Icing During Prolonged Operations in Icing Conditions.
- FAA P-8740-24, Winter Flying Tips.
- “Deicing/Anti-icing Fluids Evaluation,” Boeing of Canada, De Havilland Division Dash 8, all operator message No. 48.
- “Icing Precautions and Procedures,” Boeing of Canada, De Havilland Division Dash 8, all operator message No. 49.

- “Wing Upper Surface Ice Detection MD 80,” Douglas Aircraft Company Douglas Service, First Quarter, 1990.
- “Aerodynamic Effects of Deicing Fluids,” Boeing Airliner, Oct.-Dec. 1989.
- “Airplane Ground-deicing/Anti Icing,” Boeing Airliner, Oct.-Dec. 1989.
- “Deicing/Anti Icing,” Boeing Airliner, Oct.-Dec. 1989.
- “Winter Operations—An Update,” Boeing Airliner, Oct.-Dec. 1989.

NOTE: Numerous videotapes have been produced by manufacturers of deicing/anti-icing products and by aircraft operators. Access to these tapes may be available through the regional deicing/anti-icing coordinator or Flight Standards Training Division (AFS-500).

**RESERVED.** Paragraphs 3-2179 through 3-2194.

**VOLUME 3 GENERAL TECHNICAL ADMINISTRATION****CHAPTER 33 CABIN SAFETY AND FLIGHT ATTENDANT MANAGEMENT****Section 4 Flight Attendant Requirements**

**3-3511 NUMBER OF FLIGHT ATTENDANTS (F/A) REQUIRED AT STOPS WHERE PASSENGERS REMAIN ON BOARD, §§ 121.391 AND 121.393.** In 1985, John Cassady, Assistant Chief Counsel, Federal Aviation Administration (FAA) (AGC-200) issued a legal interpretation that stated that during the boarding and deplaning process, all of the F/As required by Title 14 of the Code of Federal Regulations (14 CFR) part 121, § 121.391(a) must be on board the aircraft. During deplaning or boarding at all points, including an intermediate stop, the full FAA minimum F/A complement must be on board. The only time the number may be reduced, per § 121.393(b) (formerly codified at § 121.391(3)), is when all the remaining on board passengers are continuing on to the next destination and at a time when no other passengers are deplaning or boarding. To view the most recent legal interpretation regarding this issue, go to: [http://www.faa.gov/about/office\\_org/headquarters\\_offices/agc/pol\\_adjudication/agc200/Interpretations/](http://www.faa.gov/about/office_org/headquarters_offices/agc/pol_adjudication/agc200/Interpretations/). It is the position of Flight Standards Service (AFS) that, pending any amendment to § 121.393, the current regulations require the following:

**A. Boarding and Deplaning.** During the passenger boarding and deplaning phase on each flight, all of the F/As required by § 121.391(a) must be on board the airplane.

**B. Intermediate Stop.** During an intermediate stop where passengers remain on board, the number of required F/As, or persons trained in emergency procedures as per § 121.393(b)(2), may be reduced according to § 121.393(b). However, during the deplaning and boarding phase at an intermediate stop where passengers remain on board, all of the F/As required by § 121.391(a) must be on board the airplane.

**3-3512 DISTRIBUTION OF F/As.** Part 121 stipulates that F/As must be uniformly distributed throughout the operation of the flight. This includes when the aircraft is in flight, parked at the gate, moving on the surface, taking off, and landing. The most important part of this requirement pertains to placing F/As in locations that will provide the most effective egress of passengers in the event of an emergency evacuation.

**A. Purpose.** The purpose of this requirement is to avoid having several F/As assigned to a sparsely occupied compartment when most of the passengers are grouped in another compartment having only one F/A.

**B. Required Placement.** Information regarding the required placement of F/As for takeoff and landing for an aircraft can be found in either the Type Certificate Data Sheet (TCDS) or the Flight Standardization Board (FSB) report. For example, those documents require the stationing of F/As at both the 3L and 3R positions on the DC-10 and MD-11 aircraft. Principal operations inspectors (POI) may assist air carriers in obtaining this information by contacting the appropriate Aircraft Evaluation Group (AEG).

**C. Change of Location.** The POI should not approve a change to the location of required F/A stations reflected in the TCDSs without the following actions:

1) Carefully analyzing the “request for a change” in order to determine that the assigned evacuation duties of the F/As will meet the provisions of part 121. Consideration to change the location of the required F/A stations should be based on changes in the cabin configuration such as number of seats, location of galleys, or F/A duties.

2) Consulting with the appropriate AEG should establish the reason for the location of the required F/A stations. In some aircraft, this location is quite critical while in others it may make little or no difference.

3) Considering if a partial evacuation demonstration, as required by part 121, is necessary.

**3-3513 DUTY ASSIGNMENT OF REQUIRED AND NONREQUIRED F/As.** Part 121 requires that, during taxi, the F/A complement required by § 121.391 remain at their duty stations with safety belts and shoulder harnesses fastened, except to perform duties related to the safety of the aircraft and its occupants. All F/As, even those in excess of the minimum crew complement, must keep their safety belts and shoulder harnesses fastened unless the F/A is performing duties related to the safety of the airplane and its occupants. These duties may include:

- Safety briefings,
- Compliance checks of seat belt fastening,
- Conducting passenger briefings,
- Ensuring passenger compliance with stowage of the food and beverage tray,
- Ensuring passenger compliance with the seatbelt and no smoking placards/lights,
- Checking for the proper stowage of carry-on baggage,
- Attending distressed passengers, or
- Responding to emergency situations.

NOTE: Because the pertinent regulation states that only required F/As may get up to perform safety-related duties, technically those in excess of the required number were not able to get up during aircraft movement. AFS has granted a petition for exemption that allows all F/As to perform safety-related duties during movement on the surface when the number of F/As aboard a particular flight exceeds the number required by part 121. To view this exemption, go to the FAA’s Automated Exemption System (AES) at <http://aes.faa.gov> and type “5533” in the blank “Exemption Docket Number” field.

**A. Minimum F/A Requirement.** Part 121 states the requirements used to determine the minimum number of F/As for each passenger-carrying airplane operated by an air carrier.

**B. F/A Training.** The F/As who make up the minimum complement, specified in the air carrier’s operations specifications (OpSpecs), must be fully trained in accordance with part 121 subpart N and qualified on that type airplane in accordance with part 121 subpart O.

1) Some air carriers may use only the minimum number of F/As, while others occasionally or frequently use F/As in excess of the number required. In accordance with

§ 121.392, any person identified by the air carrier as an F/A on an aircraft must be trained and qualified in accordance with part 121 subparts N and O. This includes F/As in excess of the number required by § 121.391(a) and when F/As are not required by § 121.391(a).

2) An F/A in the process of meeting Operating Experience (OE) requirements would not yet be qualified and could not be used as a “required” F/A. Section 121.434(e) states, in part, “flight attendants receiving operating experience may not be assigned as a required crewmember.” In accordance with § 121.392(b), a qualifying F/A who is receiving OE must be identified to passengers as a qualifying F/A. Air carriers may determine how they want to identify these individuals to passengers, as appropriate for their operation. Some possible methods would be to differentiate their uniform from that of a fully qualified F/A, identify F/As in training as “trainees” via nametags, or to make an announcement to passengers before the aircraft pushes back from the gate.

**C. Required F/As.** Part 121 does not require the use of extra or nonrequired F/As. The capability to handle emergency situations and emergency evacuations is based on the complement of required F/As. The duties assigned to the required complement of F/As must be realistic, be capable of being practically accomplished, and take into account the possible incapacitation of an individual crewmember.

**D. Additional F/As.** If an air carrier uses more trained and qualified F/As than are required by part 121, then the air carrier should have a procedure whereby the F/As required to fulfill the regulatory requirements are appropriately assigned. The extra F/As need to be identified.

**E. Distribution of Extra F/As.** The air carrier should evenly distribute extra F/As. The air carrier’s manual should contain procedures which identify the required and nonrequired F/As. The air carrier should not assign duties to the extra F/As who would mandate their presence and duty assignment in the event of an emergency situation such as an evacuation.

**3-3514 USE OF NON-F/A PERSONNEL IN AIRCRAFT CABINS.** U.S. air carriers periodically use company employees in the cabins of its aircraft for the purpose of conducting certain passenger service activities, such as serving beverages, conducting customer relations, or acting as translators. These persons are not assigned to flights to perform safety duties. These company employees are not acting in the capacity of an F/A nor are they, in general, trained or qualified to act as a F/A. The regulations do not prohibit the use of non-F/A personnel by an air carrier. However, their presence could conceivably interfere with the F/As if they were not properly instructed. The following guidance should be considered when non-F/A personnel are used by an air carrier.

**A. Status of Non-F/A Personnel.** Air carriers may use these individuals to perform activities limited to passenger service. They are a different category of cabin personnel and are not persons trained as F/As.

**B. Applicable Regulations.** Non-F/A personnel are subject to the same provisions of part 121 as passengers. For example, they must receive a pretakeoff briefing, they must be seated for movement on the surface, takeoff, and landing, and they must stow their carry-on baggage as

required by part 121. They must also comply with the seatbelt requirements of part 121. They may not conduct any activities during movement on the surface.

**C. Instruction.** These individuals should receive enough instruction that they know what activities they may perform and equipment they may or may not operate so as not to interfere with the F/As. If they operate equipment they must carry the applicable parts of the F/A manual. The appropriate parts of the manual should provide enough information to ensure that they understand their duties and procedures, and to ensure that they do not interfere with the F/As' duties and procedures.

**D. Assignment of Activities.** The activities assigned to these individuals should be clearly distinguishable from the duties assigned to the F/A. They should not be permitted to operate any equipment or systems for which specific training is required by part 121 (e.g., electrical galley equipment, heating and ventilation controls for the cabin, and the public address (PA) system, except to perform language translator duties for passenger briefings).

**E. Identification of Non-F/A Personnel.** The air carrier may want to have these individuals distinguishable from the F/As. That could be through the use of an identification card, a different uniform, or some other means.

**RESERVED.** Paragraphs 3-3515 through 3-3530.

**VOLUME 3 GENERAL TECHNICAL ADMINISTRATION****CHAPTER 33 CABIN SAFETY AND FLIGHT ATTENDANT MANAGEMENT****Section 3 Flight Attendant Qualifications**

**3-3531 FLIGHT ATTENDANT (F/A) OPERATING EXPERIENCE (OE).** Title 14 of the Code of Federal Regulations (14 CFR) part 121 requires that F/As acquire OE. An F/A must, for at least 5 hours, perform the assigned duties of an F/A under the supervision of an F/A supervisor who personally observes the performance of these duties. This OE must be gained after satisfactory completion of the appropriate training and must be acquired during operations conducted under part 121. OE is required in order for F/As to become fully qualified to serve in operations conducted under part 121. OE gives the air carrier the opportunity to familiarize qualifying F/As with aircraft sounds and maneuvers associated with routine flight operations, emphasizing the normal time sequences available during flight, and provide the qualifying F/A trainee with practical experience in the performance of routine duties and procedures. OE also provides the air carrier with the chance to ensure that the F/A is able to apply the lessons learned during basic indoctrination and initial training. OE also gives the air carrier the opportunity to ensure that the trainee has the capabilities to qualify for F/A assignment of duties during a flight.

**A. Completion of Training.** OE must be gained after satisfactory completion of the appropriate training, which includes basic indoctrination and initial training on the aircraft.

**B. OE Completed at Another Air Carrier.** F/As who have completed OE on any passenger-carrying airplane operated under part 121 are exempt from completing OE at another part 121 air carrier only if the F/A is to serve in the same group of airplanes and the air carrier shows that the F/A has received sufficient training for the airplane in which the F/A is to serve. In order for the F/A to receive credit for OE, the air carrier seeking this credit should have complete training records which clearly show the correct amount of OE time, the airplane type, and the number of hours or OE on each airplane type. If there is a reduction of OE time on the actual aircraft, then the reason for the reduction should also be part of the record. The principal operations inspector (POI) and/or cabin safety inspector (CSI), if applicable, shall ensure that the training records are correct.

**C. Group I and Group II Airplanes.** When an air carrier uses Group I and Group II airplanes, qualifying F/As shall receive OE on one type of airplane from each group. However, the combined OE time for both airplane groups would be 5 hours. Air carriers should ensure that OE time is divided equally between the two groups. The two groups of airplanes are:

- 1) Group I—Propeller driven, including reciprocating-powered and turbopropeller-powered; and
- 2) Group II—Turbojet-powered aircraft.

**D. OE During Revenue Flights.** Air carriers should give OE during operations conducted under part 121 on passenger-carrying revenue flights; these flights must be representative of the air carrier's typical route and schedule structure. When possible, these flights should consist of at least two takeoffs and landings.

**E. OE Debriefing.** Following completion of OE, the F/A trainees should participate in a debriefing, including a discussion of the safety duties they observed. As a minimum, the debriefing should include discussion of any check or use of emergency equipment, the passenger information briefings, passenger seatbelt discipline, application of the carry-on baggage rule, crew coordination, and any unusual passenger handling situations.

**F. Nonrequired F/A Crewmember.** Qualifying F/As obtaining OE shall be assigned to the flight as a member of the cabin crew, but must be in excess of the minimum number of fully qualified F/As (as listed in the air carrier's operations manual). Qualifying F/As obtaining OE should not occupy a required F/A seat. A required F/A seat is established when the air carrier conducts its partial evacuation demonstration to obtain its operating certificate for that airplane. Part 121, § 121.291 stipulates that an air carrier must perform a partial emergency evacuation demonstration in order to change the location of an F/A's duty station.

**G. F/A Duty Performance.** Qualifying F/As receiving OE may not be assigned as a required crewmember. However, qualifying F/As obtaining OE should have the opportunity to practice all F/A duties while being supervised by an OE supervisor. Air carriers which operate aircraft having a requirement for one F/A, and are equipped with one F/A seat, should consider having programs which provide (under supervision) the opportunity for newly qualified F/As who have completed OE to perform the duties of an F/A from the required F/A jump seat.

**H. Qualifying F/A Identification.** In accordance with § 121.392(b), a qualifying F/A who is receiving OE must be identified to passengers as a qualifying F/A. Air carriers may determine how they want to identify these individuals to passengers, as appropriate for their operation. Some possible methods would be to differentiate their uniform from that of a fully qualified F/A, identify F/As in training as "trainees" via nametags, or to make an announcement to passengers before the aircraft pushes back from the gate.

**I. Number of F/A Trainees.** Some air carriers schedule large numbers of F/A trainees on flights to satisfy OE requirements. The number of trainees on a single flight often exceeds the number of fully qualified F/As required by § 121.391. Air carriers that schedule an excessive number of qualifying F/As for OE create an unrealistic environment. The number of qualifying F/As receiving OE should not exceed the number of F/As required by § 121.391, plus any additional, fully qualified F/As that may be scheduled for that particular flight. These additional positions should be those that are listed in the air carrier's F/A manual as additional F/A positions with assigned duties. For example, the aircraft may have a requirement for three F/As and the air carrier has provisions to assign a fourth F/A. The safety duties of this F/A must be listed in the F/A manual. In this example four qualifying F/As obtaining OE should be scheduled.

**J. F/A Supervisors.** The regulations pertinent to OE require that qualifying F/As obtain OE to perform the assigned duties of an F/A under the supervision of a supervisor qualified as an F/A under part 121. The air carrier should designate the people permitted to perform this supervisory function. The supervising individuals must be experienced in the duties and responsibilities of the F/A and qualified to instruct and evaluate F/A trainees. These supervising individuals should be provided with additional training and/or guidance regarding conduct of OE flights. The supervisors must be qualified on the airplane type. Information about qualified

supervisors who can give OE should be included in the Federal Aviation Administration (FAA)-approved training program for each air carrier. The program should also include a description of the additional training and/or guidance which was given to these individuals.

**K. New Air Carriers or Airplanes.** New air carriers or air carriers which introduce new airplanes are unique in that there are no fully qualified F/As. Such carriers should staff an initial cadre of F/As to act as supervisors while giving each other OE. Such air carriers should conduct initial cadre F/A OE during the airplane proving flights or ferry flights. The number of qualifying F/As who receive OE on proving runs or ferry flights should not exceed the number of F/As who are assigned duties as listed in that air carrier's F/A manual for that airplane, in accordance with the information provided in this section. Qualifying F/As who receive OE during the proving tests or ferry flights should be used to supervise other qualifying F/As obtaining OE during scheduled operations.

**L. Aircraft OE Time Reduction.** A full 5 hours of OE must be given. However, the amount of OE given on an aircraft may be reduced. When a reduction of aircraft OE time is granted, the time on the aircraft plus time spent practicing operations in an approved cabin mockup should equal at least 5 hours. Regardless of where an F/A gains OE (during an actual flight, in a cabin mockup, or in a static aircraft) the OE must occur after the successful completion of initial new-hire F/A training. The OE time in the cabin mockup could be spent performing duties such as: use of the public address (PA) system, preflight briefings, safety announcements, and exit row seating and carry-on baggage procedures. OE on the aircraft may be reduced from 5 hours to 2.5 hours if the POI determines that the air carrier has cabin mockups and door training devices which provide the quality of experience that is needed to simulate an actual flight. A full reduction to 2.5 hours of OE on the airplane should be granted when the air carrier is equipped with a Level 5 cabin mockup and the POI and/or CSI, if applicable, determines the rest of the training program is of sufficient quality. Reductions should be based on the quality of the cabin mockups (See Table 3-130, Guidance for Evaluation of a Full-Scale (Except for Length) Cabin Mockup).

1) The full-scale cabin mockups and door training devices are evaluated and approved by the POI as part of the air carrier's F/A training program. Approval of cabin mockups and door training devices is concurrent with approval of the entire training program for F/As. The cabin mockups and door training devices must be listed in the air carrier's training program. If the air carrier chooses to use a static aircraft as a training device, it must also be listed in the air carrier's training program. If an air carrier uses an actual airplane for training, the POI and/or the CSI, if applicable, should evaluate the training that is given in the airplane before allowing credit. The students should actually use the equipment and practice procedures normally expected of a required F/A during a flight. This is also the type of practice which should be performed in cabin mockups and door training devices.

2) The principle purpose of cabin mockups and door training devices is to provide realism during training for emergency situations. The POI and/or the CSI, if applicable, must evaluate the air carrier's training program to determine that the procedures (i.e., amount of time, realistic in-flight scenarios, and practice) are accomplished in the cabin mockups and through the use of other training devices, in order to approve a reduction in OE time. The POI shall provide documentation of the reasons for reducing the OE hours on the airplane.

3) Cabin mockups and door training devices have been assigned levels in accordance with their approximation to realism. Level 1 is the most basic and air carriers receive less credit for a Level 1 mockup than they would for a Level 5 device. In order to get credit for a Level 5 mockup, all of the characteristics listed in Table 3-130 must be present. Table 3-131, Evaluation of (Exit) Door Trainers, and Table 3-132, Evaluation of Other Training Devices, provide information to the POI to be used when establishing the amount of credit which can be given based on the characteristics of training devices.

**M. OE Time Substitution.** Substitution of times listed under additional training devices for requirements within a level may be subject to individual equipment evaluation by the POI and/or the CSI, if applicable. The POI and/or the CSI may determine that an air carrier receives the full credit of 2.5 hours based on the cabin mockup alone, only if an air carrier has a cabin training device which meets all the criteria for Level 5 listed in the mockup chart. However, if the air carrier does not have all the characteristics listed in Table 3-130, the POI and/or the CSI, if applicable, should look at the other characteristics which are listed in Tables 3-131 and 3-132 to decide what level of reduction is appropriate for the type of experience which may be gained in the air carrier's cabin mockup and door training device.

**Table 3-130. Guidance for Evaluation of a Full-Scale (Except for Length) Cabin Mockup**

| Level                                | Levels |   |   |   |   | Comments   |
|--------------------------------------|--------|---|---|---|---|--|
|                                      | 1      | 2 | 3 | 4 | 5 |  |
| Cabin Mockup                         |        |   |   | X | X | Level 5 requires 4-way axis.   |
| Motion                               | X      | X | X | X | X | In cross section.  |
| Operable Exits                       | X      | X | X | X | X | Must meet requirements for door (exit) trainer.                      |
| Exit Failure/Blocked                 |        |   |   | X | X |  |
| Emergency Equipment Placement        |        |   | X | X | X | Closely approximates brackets and equipment placement.               |
| Smoke/Fire Simulation                |        |   |   | X | X | Level 5 requires smoke detector alarms.                              |
| Communication System (Interphone/PA) | X      | X | X | X | X | Interactive between stations, Levels 4 and 5 have call lights.       |
| Aircraft Sound Simulation            |        |   |   | X | X |  |
| F/A Jump Seats                       | X      | X | X | X | X | Operable seatbelt/shoulder harness.                                  |
| Decompression Simulation             |        |   | X | X | X | Oxygen masks deploy from PSU. Level 5 requires crew O <sub>2</sub> . |
| Emergency Lights                     |        |   |   |   | X | Level 5 requires escape path lighting and emergency light switch.    |
| Operable Galley Equipment            |        |   | X | X | X | Levels 3-5 require actual galley components.                         |
| Evacuation Alarm/Signal              |        |   |   |   | X |  |

**Table 3-131. Evaluation of (Exit) Door Trainers**

| Door (Exit) Trainer                | Comments   |
|------------------------------------|--|
| Door/Exit Scale                    | Size/weight, modeled after the actual door handles.                                  |
| Exit Motion                        | Duplicates full aircraft range to include opening, closing, and emergency operation. |
| Exit Failure                       | Method of showing failure.   |
| F/A Seat/Restraint                 | Actual location on aircraft.   |
| F/A Panel                          | Correct proximity to exit and F/A seat.  |
| Simulated Slide or Slide/Raft Pack | Forces which approximate forces needed to open in an emergency situation.            |
| Manual Inflation Means             | Can be moved around to simulate differing locations caused by an accident.           |
| Window Exit                        | Actual weight and size.  |

**Table 3-132. Evaluation of Other Training Devices**

| Other Trainers/Simulators                                 | Comments  |
|---|---|
| Fire Fighting Simulator                                   | Equipment must have a way to show that the fire is extinguished.  |
| Interphone/PA System                                      | Approximation to the actual working equipment on the airplane.  |
| Computer Evacuation Simulator                             | Accuracy and complexity of computer models  |
| Actual Function Brackets and Portable Emergency Equipment | Forces necessary to remove and replace equipment accurately represented.  |
| F/A Seats Equipped with Actual Restraints                 | Actual restraint system, actual room to use system (for example, two people on a double jump seat or when the jump seat is located in a confined area). |
| Equipment to Simulate Decompression                       | Ability to automatically and manually deploy masks and/or simulate signs of decompression (i.e., noise and vapor).                                      |
| Additional Computer-Based Training Safety Programs        | Adequacy of Program.  |

**RESERVED.** Paragraphs 3-3532 through 3-3545.

**VOLUME 3 GENERAL TECHNICAL ADMINISTRATION****CHAPTER 38 EVALUATE PART 135 (NINE SEATS OR LESS) APPROVED AIRCRAFT INSPECTION PROGRAM****Section 1 Evaluate and Approve an Approved Aircraft Inspection Program****3-3731 PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) ACTIVITY CODES.**

**A. Maintenance:** 3343, 3344.

**B. Avionics:** 5343, 5344.

**3-3732 OBJECTIVE.** This chapter describes how to evaluate and approve a Title 14 of the Code of Federal Regulations (14 CFR) part 135 (nine seats or less) Approved Aircraft Inspection Program (AAIP).

**3-3733 GENERAL.** The AAIP is used in lieu of the aircraft inspection requirements of 14 CFR part 91, § 91.409. An AAIP allows each operator to develop a program tailored to its particular needs to satisfy aircraft inspection requirements. A well-developed and monitored AAIP should result in a more efficient inspection program.

**3-3734 AAIP REQUIREMENTS.**

**A. AAIP Regulatory Requirements.** Part 135, § 135.419 lists the regulatory requirements for an AAIP. The AAIP must be contained in the operator's Policy and Procedures Manual (PPM). The Federal Aviation Administration (FAA) approves the AAIP and authorizes the use of that approved program through the issuance of operations specifications (OpSpecs). The operator may request to use an AAIP, or the FAA may find the operator's current program is inadequate and require the operator to develop an AAIP.

**B. AAIP Contents.** The AAIP must contain the following:

1) Instructions and procedures for the conduct of aircraft inspections (which must include necessary tests and checks), setting forth in detail the parts and areas of the airframe, engines, propellers, rotors, and appliances, including emergency equipment, that must be inspected.

2) A schedule for the performance of the aircraft inspections expressed in terms of the time in service, calendar time, number of system operations, or any combination of these.

3) Instructions and procedures for recording discrepancies found during inspections and correction or deferral of discrepancies, including form and disposition of records.

**3-3735 COORDINATION REQUIREMENTS.** Coordination is required to be conducted by the principal maintenance inspector (PMI) and principal avionics inspector (PAI) to review the AAIP for completeness and adequacy. Completeness is established if the AAIP covers the entire

aircraft in its present configuration with all associated equipment and components being addressed in the AAIP. Adequacy is determined by verifying that the scope and instructions for performing the inspections are well defined in the program.

### **3-3736 REFERENCES, FORMS, AND JOB AIDS.**

#### **A. References (current editions):**

- Title 14 CFR Parts 39, 119, and 125.
- Title 14 CFR part 43, § 43.11, Content, Form, and Disposition of Records for Inspections Conducted Under Parts 91 and 125 and §§ 135.411(a)(1) and 135.419 of this Chapter.
- Title 14 CFR part 91, § 91.409(c)(2) or (f)(2), Inspections.
- Section 91.417, Maintenance Records.
- Title 14 CFR part 135, §§ 135.415, Service Difficulty Reports.
- Section 135.417, Mechanical Interruption Summary Report.
- Section 135.419, Approved Aircraft Inspection Program.
- Section 135.421, Additional Maintenance Requirements.
- Section 135.422, Aging Airplane Inspections and Records Reviews for Multiengine Airplanes Certificated with Nine or Fewer Passenger Seats (This section applies to multiengine airplanes certificated with nine or fewer passenger seats, operated by a certificate holder in a scheduled operation under this part, except for those airplanes operated by a certificate holder in a scheduled operation between any point within the State of Alaska and any other point within the State of Alaska).
- Title 49 of the Code of Federal Regulations (49 CFR), part 180, Continuing Qualification and Maintenance of Packagings.
- Advisory circular (AC) 135-7, Part 135: Additional Maintenance Requirements for Aircraft Type Certificated for Nine or Less Passenger Seats.
- AC 135-10, Approved Aircraft Inspection Program.
- OpSpec D073, Approved Aircraft Inspection Program (AAIP).

#### **B. Maintenance Review Board Report (MRBR) Forms. None.**

#### **C. Job Aids. Automated OpSpecs checklists and worksheets.**

### **3-3737 PROCEDURES.**

#### **A. Plan and Coordinate the Task.**

- 1) Advise the operator/applicant of regulatory requirements and policies.
- 2) Determine whether the aircraft meets eligibility requirements.
- 3) Review operator/applicant's file to identify any information concerning the initial AAIP or revision. Inspectors should become thoroughly familiar with the operator/applicant's operation, and should give special attention to the following items:

- Operating environment;
- Type of aircraft (size and complexity);
- Maintenance/inspection organization, as applicable;
- Operating history; and
- Aging aircraft inspection requirements.

4) Remind the operator that the AAIP or revision must be included in their PPM.

5) Review the operator/applicant's PPM to ensure that it meets all other maintenance requirements relating to AAIP policies and procedures.

6) If this task is performed as part of an original certification, review the Schedule of Events (SOE) to ensure that the evaluation can be accomplished according to the schedule.

#### **B. Evaluate the Proposed Inspection Program Procedures.**

1) Evaluate the procedures for scheduling inspections. The program must list inspection intervals for each inspection task and should describe personnel responsibilities for scheduling, performing, and documenting inspections.

2) Ensure the AAIP includes information that defines the program and includes instructions on the administration and implementation of the program.

3) The program can include procedures to ensure that properly certificated, qualified, trained, current, and authorized personnel perform inspections.

4) Evaluate procedures for reporting and correcting discrepancies. The program must include detailed instructions, procedures, and the necessary forms and documents for the recording and repair of discrepancies. These instructions, procedures, and forms may appear elsewhere in the company's PPM, but their location must be referenced in the AAIP.

5) When reviewing an AAIP for transport category airplanes, the PMI/PAI should utilize the MRBR to verify that the operator/applicant implements these requirements into the inspection process of the AAIP.

6) The program may identify, by title, the person responsible for ensuring that personnel accomplishing inspections under the AAIP meet regulatory requirements.

7) The operator should have procedures in place to ensure that their aircraft is returned to service in an Airworthy condition after the completion of an inspection. This would include compliance with all applicable Airworthiness Directives (AD), airworthiness limitation items (ALI), and life-limited parts.

#### **C. Evaluate the Proposed Inspection Program or Revision.**

1) The PMI/PAI evaluating and approving an inspection program or revision must have an in-depth knowledge of the requesting operator's airframe, engine, propeller, rotor, and emergency equipment, along with its operational environment. If necessary, the

certificate-holding district office (CHDO) should consult with the regional specialists, appropriate Aircraft Evaluation Group (AEG), or appropriate Aircraft Certification Office (ACO), to resolve any technical issues.

2) The AAIP must encompass the entire aircraft, and should contain instructions, procedures, and standards for conducting inspections for the following areas:

- Airframe;
- Aircraft engines;
- Propellers (if installed);
- Rotors (if installed);
- Appliances;
- Survival and emergency equipment;
- Aging Aircraft Inspections (for operators utilizing scheduled operation as per § 135.422(a)).

3) While the manufacturer's recommended inspection program can be used as the basis of the AAIP, the configuration of the aircraft and any additional equipment, modifications, or repairs to the aircraft after manufacture would nullify the adequacy of that manufacturer's recommended program. The AAIP typically uses the manufacturer's program as the basis for the program, to which are added all of the inspection elements that are not covered in the manufacturer's program. Approving individual piecemeal inspection segments alone as the AAIP under § 135.419, such as an avionics inspection segment which the operator performs in addition to the manufacturer's recommended program under § 91.409(f)(3), is not permitted per § 91.409(c)(2). There cannot be two programs associated with the same aircraft.

4) The operator can develop its own AAIP. This type of program is developed and published in its entirety by the operator. It should include methods, techniques, practices, and standards necessary for the proper accomplishment of the program. If the operator chooses to develop its own program, the program should provide the same level of safety as the manufacturer's inspection program.

5) The avionics and instrument systems are not always installed by the aircraft manufacturer and may not be included in their recommended inspection program. The avionics and instrument system inspections should be based on the equipment manufacturer's recommendations or instructions, and must be included in the AAIP.

6) The engine, propeller, and governor overhaul periods (as applicable) should correspond to the time in service intervals that are authorized in OpSpec paragraphs D101/D102.

7) The program must include the inspection criteria as provided in any applicable instructions for continued airworthiness (ICA), including those that pertain to any repairs or alterations previously accomplished.

8) The AAIP cannot amend or extend retirement times for life-limited parts. Life limits must be expressed in one of the following measures:

- Number of cycles;
- Number of landings;
- Length of time in service;
- Calendar time;
- A combination of the above measures.

9) The program can include additional maintenance requirements to include the test and inspection of the emergency locator transmitter (ELT), altimeter/altitude reporting system, and air traffic control (ATC) transponder. Repetitive AD compliance and ALIs may also be included in the program. The AAIP cannot override or alter the regulatory time intervals for these additional maintenance requirements.

10) The instructions, procedures, and standards must be clear and easily understood. They must identify the scope of each task and provide a detailed outline of each step that must be accomplished to perform the inspection and ensure that established performance standards are met.

11) Submission of a commercially available aircraft maintenance tracking program does not constitute an AAIP and is not to be approved as such. These tracking programs may be used to support the operator's development of its own program, but are not managed or controlled by the operator and are not to be approved as an AAIP.

**D. Use of Scheduling "Windows."** Scheduling windows represent a built-in inspection tolerance in an AAIP, which allows for scheduling flexibility. Principal inspectors (PI) can approve the use of scheduling windows when contained in the particular aircraft's AAIP submission package.

1) Using windows should not significantly affect the target inspection interval. When starting a part of an inspection (e.g., panels opened), the operator should complete the inspection before placing the aircraft back in service. Do not consider using windows as justification for performing piecemeal inspections, nor should they become permanent time extensions. PIs should ensure the use of windows do not allow for the accumulation of excess time between inspections, resulting in an overall escalation in an inspection interval.

2) When the operator's AAIP inspection intervals align with the airframe, engine, propeller, rotor, or appliance manufacturer's inspection program intervals, the operator may include the manufacturer's published windows in their AAIP submission or propose smaller windows based on the specifics of the intended operation.

3) When the operator's AAIP inspection intervals are different from the aircraft, engine, propeller, or component manufacturer's inspection intervals, or when the operator develops their own AAIP, an operator may adapt scheduling procedures to allow for windows. No more than (plus or minus) 20 flight hours, 20 flight (or component) cycles, or one calendar-month, as appropriate, can be used for the planned inspection type and the intended operation. The proposed procedures must also provide for a method to reduce the time to the next scheduled inspection when windows are used. (For example, a recurring inspection

scheduled for 200 flight hours and accomplished at 215 flight hours should result in the next inspection being due in 185 flight hours from the time of completion, not 200.)

4) Scheduling windows must not allow extensions of AD compliance times, ALIs, or life-limited part retirement times. The operator's policy and procedures for the use of scheduling windows should be in their PPM.

**E. OpSpecs.** The certificate holder's OpSpec D073 lists the registration number, serial number, and make, model, and series (M/M/S) of each aircraft that is subject to an AAIP. Each certificate holder who has an AAIP shall have each aircraft that is subject to the program inspected in accordance with the program.

**F. FAA-Initiated AAIP Revision.** Whenever the FAA finds that revision to an AAIP is necessary for the continued adequacy of the program, the operator must revise the AAIP following their documented policies and procedures.

1) After proper notification, the operator must make any changes to the program determined by the CHDO to be necessary. The notification should be in the form of official correspondence from the CHDO to the operator, and must state the reason for the program revision.

2) The operator may petition the CHDO to reconsider the notice to revise their AAIP. This should be in the form of written correspondence from the operator to the CHDO, and must be filed within 30 days after the operator receives the notice from the CHDO.

3) The CHDO must act on the operator's petition to reconsider the notice within a reasonable timeframe.

**G. Operator-Initiated AAIP Revisions.** It is the operator's responsibility to provide the CHDO with adequate information to justify all aspects of the proposed AAIP revision.

1) If a manufacturer extends its recommended inspection interval, the operator may request approval to use the extension by submitting a revision to their AAIP. The manufacturer's documented recommendation must accompany the request. The PMI or PAI should not automatically approve a task interval adjustment recommended by the manufacturer. The inspector must consider the individual operator's aircraft use and experience, and should ensure that the task interval adjustment will not compromise safety.

2) The operator may request task interval adjustments based on past operating experience of their aircraft. The operator must have obtained the information from its own in-service reliability for that particular aircraft type, not from another operator's in-service experience with that same aircraft or aircraft type.

3) Amendments or extensions are not permitted for retirement times of life-limited parts, ALIs, and/or those intervals designated by ADs.

**3-3738 TASK OUTCOMES.**

**A. Analyze Findings.** Determine if the AAIP/revision meets all regulatory requirements. Before meeting with the operator/applicant(s), discuss initial findings with appropriate FAA personnel to determine the content of the briefing. Depending on the findings, it may be necessary to coordinate with the Certificate Management Team (CMT), regional specialists, or other FAA personnel.

**B. Debrief Operator/Applicant.** Discuss results of the evaluation, including any deficiencies noted during the AAIP evaluation.

**C. Complete the Task.** Completion of this task will result in one of the following:

1) If the AAIP/revision is not acceptable, advise the operator/applicant(s) by letter that the program/revision is rejected. Give the reasons for the rejection. Return the program proposal and documentation to the operator/applicant.

a) If this review is performed as part of a certification, inform the applicant in the letter that the certificate will not be issued until the deficiencies are corrected. If necessary, advise the applicant to revise the SOE.

b) The letter must also accomplish the following:

- Confirm and document all agreements made during the debriefing;
- Identify the date the AAIP/revision was submitted;
- Show the revision number and date, as applicable;
- Identify and describe all deficiencies by chapter, section, page, etc.;
- Reference each deficiency to the appropriate regulation;
- Request a revised SOE, if necessary; and
- If a revision, remind operator/applicant(s) that the revision is not acceptable.

2) If the program or revision meets all regulatory requirements, accomplish the following:

a) Ensure that the AAIP or revision has been fully coordinated between the PMI and PAI.

b) For a new or revised program, approval is granted by a stamp of approval and the PMI/PAI signature on the List of Effective Pages (LEP), or by some other official means of conveying approval.

c) The FAA authorizes the use of an AAIP through the issuance of OpSpec D073.

d) Send the operator/applicant(s) a letter advising the AAIP is approved. The letter must accomplish the following:

1. Confirm and document all information given during the debriefing.
  2. Indicate the submission date of the AAIP/revision.
  3. Show the revision number and date, if applicable, and advise the operator that the revision may be implemented.
  4. If the operator submitted a manual revision and it is acceptable, advise the operator of acceptance.
  5. If the operator did not submit a manual revision, remind the operator to revise the manual to incorporate the program/revision.
  6. Enclose the stamped, dated, and signed original AAIP.
  7. Enclose the accepted manual revision, if appropriate.
- e) Once the inspector approves the inspection program/revision, he or she should save and file all data used in the evaluation process in the operator's file. Authorized persons may refer to this information in the event of any incident related to the program.

**D. Complete the PTRS Record.**

**3-3739 FUTURE ACTIVITIES.**

**A. AAIP.** The AAIP should be reviewed on a periodic basis to ensure the current status of the operator's inspection program.

**B. Spot Checks.** Perform spot checks of the operator's aircraft while undergoing an inspection to ensure that the tasks are being accomplished in accordance with the operator's program.

**RESERVED.** Paragraphs 3-3740 through 3-3755.

**VOLUME 3 GENERAL TECHNICAL ADMINISTRATION****CHAPTER 54 PART 142 TRAINING CENTERS****Section 5 Part 142 Training Centers: Outsource Training—Air Operators and/or Fractional Ownership Program Managers Contracting With Training Providers**

**3-4409 GENERAL.** This section provides policy guidance for principal operations inspectors (POI) that have operators or receive requests from their operators to outsource a portion of their required crewmember training. The information in this section may also be useful for Training Center Program Managers (TCPM), operators, and training center managers (TCM).

**3-4410 BACKGROUND.**

**A. References.** In addition to adopting Title 14 of the Code of Federal Regulations (14 CFR) part 142, the Federal Aviation Administration (FAA) also revised applicable sections of 14 CFR parts 61, 63, 91 subpart K (part 91K), 121, 125, 135, and 141 to provide a means for crediting the training, testing, and checking accomplished in flight simulators and flight training devices (FTD) toward the flight training requirements of those parts. The adoption of part 142 enabled operators to pursue training alternatives not previously available under the regulations. Part 142 has made the use of training centers by operators more widely accepted as an alternative means of providing training to its employees.

NOTE: “Alternative means” as used in part 142 has in some cases been misunderstood and has been interpreted to mean that compliance with a training center’s approved courses will meet the training requirements required by the appropriate operating rules for an operator. This is not the case. “Alternative means” permits an operator to outsource or arrange to have its approved training conducted by a third party. It does not mean that an operator has an “alternative means” to meet the training approval requirements governing its particular operation. Programs approved in accordance with part 142 may not be used as an alternative means of satisfying the requirements of the appropriate operating rules as approved by the operator’s POI.

**B. TCPMs and POIs.** As the use of training centers continues to increase, the interrelationship between a center’s TCPM and an operator’s POI have become increasingly important. When an operator wishes to use the services of a part 142 training center, the most common operational issues that POIs must resolve—and this section will address—are outlined below:

1) Exactly what portion of the operator’s required crewmember training; checking, and/or testing will the center be authorized to conduct?

2) What qualification requirements are necessary to enable training center flight instructors to conduct the requested training? (Refer to part 91, §§ 91.1075, 91.1089, and 91.1093; part 121, §§ 121.412 and 121.414; and part 135, §§ 135.338 and 135.340.)

3) How does the operator propose to qualify Training Center Evaluators (TCE) or other personnel to become contract check airmen? (Refer to §§ 91.1063, 121.411, 121.413, 135.337, and 135.339.)

4) What documentation is required to ensure the training conducted by the center complies with the operator's approved curriculums, and how does the operator propose to document this training?

### **3-4411 BASIC STRUCTURE.**

**A. Operating Rules.** The operating rules of parts 121, 125, 135, and part 91K permit operators to use the services of another operator certificated under the same part or a certificated part 142 training center to conduct some or all of their required crewmember training. If approved by the operator's POI, an operator may use the training provider's facilities, equipment, and personnel to varying degrees to accomplish the training, checking, and testing required by their approved training program.

**B. Training Curriculum.** Regardless of who actually developed an operator's training curriculum, the operator is responsible for its approval, oversight, content, and currency. Regulations are very clear regarding an operator's requirement to have appropriate crewmember training programs that support their particular operation. The regulations are also clear concerning the requirement to have these programs approved by the Administrator. In the case of the operator, this approval is delegated to the operator's POI. In similar fashion, training centers certificated under part 142 are also required to have their curriculums approved by the Administrator. For training centers, the approval authority is delegated to the center's TCPM.

**C. Arrangements.** The following cases are the two most common arrangements that are formed between air carriers and training centers.

#### **1) Case One—Dry Lease.**

a) The least complicated way in which an operator may use the facilities and equipment of a training center is through a "dry lease" agreement. In this case, the operator has developed and maintains its own approved training curriculum, associated courseware, materials, checklists, procedures, and personnel to conduct training and checking, but elects to dry lease flight training equipment and facilities from a training center. Associated airman certification functions and proficiency requirements are completed by check airman employed by the carrier (not the training center), the operator's aircrew program designee (APD) or the FAA. The operator accomplishes recordkeeping, although required training records may be maintained at the training facility if approved by their POI. POIs will make all enhanced Vital Information Database (eVID) entries concerning the operator's check airman activities. The operator's POI approves the use of the center's flight training equipment; however, the operator is responsible for ensuring that the center's equipment and facilities continue to meet the standards required to accomplish required training. The training center simply acts as a host for the operator and center personnel are not involved in the training or checking of the operator's crewmembers.

b) POIs are responsible for providing required surveillance to determine if contracted facilities and training equipment meet the requirements for continued approval. Due

to the center's physical location in relation to the POI's office, the POI may request the center's TCPM to provide information concerning the training center facility and equipment as well as assistance in performing required surveillance.

c) Operators who conduct training in this manner (dry lease) are not outsourcing their training from another training provider and therefore do not require approval for outsourced training in their operations specification (OpSpec)/management specification (MSpec) A031.

**2) Case Two—The Training Center Provides Facilities, Instructors, and/or Evaluators Under Contract to the Operator.**

a) The second most common way operators use the services of part 142 training centers is to enter into an agreement with the center to provide instructors and/or evaluators to act on behalf of the operator in the conduct of the operator's training curriculum. In this situation the operator may have developed his/her own training curriculum, hired a consultant to develop his/her curriculum, or adopted the training center's curriculum. Regardless of the source, each curriculum must be approved by the operator's POI for their use. However, it is not uncommon for operators to adopt one of the center's core or specialty curriculums and submit it without revision, to their POI for approval. Prior to submitting a center developed curriculum to their POI for approval, the operator must conduct a detailed review and comparison and analysis of the center's curriculum, courseware, procedures, equipment, and personnel to determine if the training center's curriculum will meet their operational needs. If the operator determines that the center's curriculum will meet their needs, they may submit it to their POI for approval. If the POI accepts the submitted curriculum and grants approval, the curriculum becomes part of the operator's approved program, and in effect becomes the operator's curriculum. This trend is particularly evident among part 135 and new entrant part 121 operators for whom the development of a complete in-house pilot qualification program using modern flight simulation devices often entails prohibitive costs and logistics.

b) Training center personnel (flight instructors) conducting flight training activities for an operator must be trained and qualified in accordance with the air carrier's approved program to become eligible to conduct training under the air carrier's approved curriculum (§§ 121.412 and 121.414; §§ 135.338 and 135.340; or §§ 91.1091 and 91.1095, as appropriate). If an air carrier wishes to have the center provide flight checking or testing services, the air carrier must ensure nominated individuals are trained and qualified as a check airman in accordance with their approved training program (§§ 121.411 and 121.413; or §§ 135.337 and 135.339; or §§ 91.1089 and 91.1093, as appropriate).

c) The center may maintain the operator's training records if approved by the POI. However, the responsibility for the adequacy of the records remains with the operator, not the training center.

d) If the operator elects to nominate one or more of the center's personnel to act as a contract check airman, and the operator's POI authorizes such check airmen, the POI must maintain all check airman entries in the eVID. In other words, whether an operator uses his/her own personnel as check airmen (as outlined in case one) or elects to use center employees as contract check airmen, all required eVID entries relating to check airmen will be made by the

POI. This will help ensure that both the POI and the operator maintain proper operational control over persons performing check airmen/contract check airmen functions.

e) The POI must be assured that the center's facilities and equipment are adequate to conduct the training the operator is proposing. The center's TCPM is one of the POI's best sources of information to enable him/her to make the determination that the center's facilities and training equipment are adequate for the proposed operation and to assist with required surveillance activities.

f) Operators who wish to engage a training center to accomplish the aircraft-specific training modules of their curriculum create special surveillance requirements. The division of an operator's required training between the operator and a training center creates a unique recordkeeping situation as well as specialized training for the center instructors. POIs must be extremely vigilant in determining who is accomplishing each element of the operator's program and that the complete program is accomplished. POIs should communicate regularly with the training center's TCPM and are encouraged to request assistance with surveillance of the operator's activities at the training center. The TCPM's assistance will typically afford the POI greater flexibility and a higher level of surveillance than would normally be possible without the TCPM's assistance. An operator should develop and keep up to date a "Training Source Document" or similar statement detailing what training will be provided in-house and what will be conducted by the training center. See the FAA's Air Transportation Division (AFS-200), Air Carrier Training and 142 Training Center Branch (AFS-210) Web site for a sample of such a document.

**3-4412 PART 142 APPROVED CURRICULUMS.** A short review of the various types of training center curriculums and their approval process will assist with our understanding of the appropriateness of these curriculums for use by an operator. It is important to emphasize that a center's approved curriculum may not be used by an operator without first being evaluated for appropriateness and secondly, being approved for use by the operator's POI.

#### **A. Core Curriculum.**

1) A core curriculum is a training center-developed course that is approved by the Administrator (through the TCPM) for the purpose of meeting the training and certification requirements of airman under parts 61 and/or 63. (Refer to § 142.3.).

2) In order for a training course to be approved as a core curriculum it must:

- a) Meet the applicable requirements of part 142 subpart B and part 61 or 63;
- b) Contain all the events and maneuvers required by the appropriate practical test standards for the issuance of the particular airman certificate for which the curriculum was designed;
- c) Meet the requirements of the Flight Standardization Board (FSB) report for that specific aircraft;

d) Consist of training segments that identify training and testing requirements for the issuance of a particular certificate;

e) Follow the guidance in Volume 3, Chapter 54, Section 6, and Volume 3, Chapter 19, Section 5, concerning ground and flight training threshold hours; and

f) Include maneuver descriptions, standard operating procedures, checklists, and other supporting courseware.

3) Part 142 pilot training curriculums are designed to meet the certification requirements of part 61 and therefore do not include many of the operator-specific elements required by the operating rules associated with an air carrier/operator. For example, a part 142 core curriculum does not require a training center to specify the training that is normally found in an operator's OpSpecs, such as authorized takeoff or landing minimums, types of authorized approaches, and captain high minimum requirements. Additionally, ground training in areas such as hazardous materials (hazmat) handling, security, aircraft maintenance, logbook procedures and flight following is also not required to be part of a part 142 training center's core curriculum. Although a training center's part 142 approved core curriculum may meet the aircraft specific requirements for an operator, these curriculums do not qualify operator's pilots for line operations and may not be used by an operator without the specific approval of the operator's POI.

**B. Specialty Curriculums.** This term refers to courses that are designed to satisfy a particular requirement of 14 CFR chapter I (parts 1-199), other than airman certification under parts 61 and 63. The Administrator (through the TCPM) is authorized to approve specialty curriculums for use by a training center and, if appropriate, associated satellite and/or remote sites (Refer to § 142.3). Training centers often develop specialty curriculums to meet the specific needs of a particular customer. Some examples of specialty curriculums include (but are not limited to) Category II/III authorization, equipment differences training, night vision goggles (NVG) and so forth. Specialty curriculums can vary widely in focus and subject matter and may be developed for personnel other than flightcrew members (Refer to § 142.81). The approval of specialty curriculums or courses by a training center's TCPM, however, does not enable those curriculums or course to be used by an operator without the specific approval of the operator's POI.

**3-4413 ROLES, RESPONSIBILITIES, AND COORDINATION.** The safety, efficiency, and quality of training provided by training centers, through the use of structured programs and advanced simulation devices, has proven to be an effective and economical means for some operators to accomplish required training. Consequently, a number of operators have come to rely on part 142 training centers as a source of technical expertise and as their primary training provider. As the use of approved training centers continues to expand, it becomes increasingly important to understand the roles, responsibilities, and coordination activities required of each participant. Subparagraphs 3-4413A through D emphasize the regulatory roles and responsibilities as well as the coordination required between operators and training centers when an operator is using a training center to conduct a portion of their required training program. Subparagraphs 3-4413A through D do not focus on day-to-day activities associated with the surveillance of training centers or operators outside of the context and scope of this section. It is

presumed that these activities are being conducted in accordance with the guidance located elsewhere in this chapter, associated regulations, orders, and policy guidance.

**A. Air Operators.** The regulatory responsibility for ensuring that an operator's training program remains current and continues to meet the operator's needs resides with the operator, not the training provider. When an operator makes application to use the services of an authorized training provider they must:

1) Ensure that all training, testing, and/or checking to be conducted by the training center has been approved by the POI before any training is accomplished.

2) Develop an instructor/check airman standardization program including a checklist, which clearly identifies those elements of the operator's program that are to be completed by the training center and those that are to be completed by the operator. This checklist must specifically identify each training element that will be conducted by the center and include the regulatory and/or the training program reference for each item.

NOTE: A sample air operator standardization review may be found on the AFS-210 Web site. The sample program is designed to be all-inclusive and therefore not every item covered in the sample may be applicable to all operators. The sample is intended to be comprehensive and include sufficient detail to ensure the training provider has an accurate understanding of the operator's training requirements. The FAA suggests that each subject in the sample standardization program be reviewed with a potential training provider to ensure a complete understanding of each party's role.

3) Develop an implementation plan to perform oversight of center facilities and personnel engaged in the conduct of the operator's training and associated evaluations. The operator's implementation plan must:

a) Ensure that all training center personnel selected to act as contract instructors (both ground and flight) and/or contract check airmen are appropriately trained and qualified. Flight instructors and/or check airmen must be qualified in accordance with the operator's approved program. (Refer to §§ 91.1089 through 91.1093; §§ 121.411 through 121.414; and §§ 135.337 through 135.339, as appropriate.)

NOTE: Operators must complete a detailed comparison between their check airman curriculum and that of the training center's TCE curriculum to determine what, if any, additional training must be provided to qualify the center's personnel to act as a contract check airman. Elements of the center's instructor/TCE training curriculum that the operator finds equivalent to their training program may, with the POI's approval, be credited toward the completion of the operator's instructor/check airmen curriculum. If the center's curriculum is approved as meeting the requirements of the operator's curriculum, other than the operator specific items, no additional training for the center's personnel would be required. Any differences or deficiencies noted will require the operator to develop a training module to ensure all regulatory requirements are met and to qualify the

center's personnel as contract check airman. This module that includes the operator-specific subjects must be presented to the operator's POI for approval/acceptance.

b) Provide the center with appropriate administration procedures and instructions to be used in the accomplishment of agreed training.

c) Provide for the oversight of all contract center personnel who are authorized to conduct training, testing, and/or checking on behalf of the operator.

4) Additionally, the following procedures must be followed when requesting the use of center personnel to become qualified as contract check airmen:

NOTE: These procedures follow the guidance outlined in Volume 3, Chapter 20, and should be accomplished in the order shown.

a) Evaluate the instructor's/TCE's credentials to ensure he/she meets company requirements to become a contract check airman;

b) Evaluate the individual's training record to determine the differences training required to qualify the individual as a contract check airman;

c) Develop an appropriate training differences module(s) to qualify the center's instructor/TCE as a contract check airman and submit the training module to the POI for acceptance/approval; and

d) Conduct and record appropriate check airman training; submit the individual's name, short resume, and training records to the POI for review and approval in accordance with Volume 3, Chapter 20.

NOTE: POIs should notify the center's TCPM whenever they authorize one of the center's personnel to act as a contract check airman by forwarding the TCPM a copy of the contract check airmen's letter of authorization (LOA).

5) Coordinate the approval of flight simulation training device (FSTD) missing, malfunctioning, or inoperative (MMI) equipment procedures that will be used in support of the operator's curriculum.

## **B. POIs.**

1) When an operator requests the use of a training center's facilities, training devices, curriculums (core and/or specialty), flight instructors, TCEs, and/or other services, including recordkeeping, the POI is responsible for determining the operator's request conforms to the appropriate regulations, policies, and procedures.

2) The approval authority for an operator to conduct training at a training center resides with the operator's POI, and must conform to the training program approval process outlined in Volume 3, Chapter 19. If an operator wishes to use a training center's core and/or

specialty curriculums to meet a portion of their required training program, it is the operators' responsibility to ensure:

- a) The center's curriculums/courses meet the operator's training requirements.
- b) The curriculums are submitted to the operator's POI for review and approval in accordance with the procedures outlined in Volume 3, Chapter 1, Section 1.
- c) The curriculums are integrated into the operators training program.

NOTE: If the curriculums are approved for the operator's use, these curriculums now become a portion of the operator's approved training program, and the maintenance/currency of those curriculums becomes the responsibility of the operator, not the training center.

**3)** If an operator applies to have the same training curriculum conducted by two or more centers (either operated by the same or a different training provider/company), the operator must develop an implementation plan for each center and ensure that each of the approved centers conducts their training curriculum using the operator's approved training curriculum (including maneuvers, procedures, and checklists). Additionally, each center must be specifically approved for use by the POI and listed in the operator's OpSpec/MSpec A031. It is the responsibility of the operator to ensure that all required software and hardware approved to support the subject curriculum is available and used by each center during the delivery of their training curriculum. See subparagraph 3-4414D for additional guidance.

NOTE: POIs should notify the center's TCPM whenever they authorize one of the center's personnel to act as a contract check airman. This may be accomplished by forwarding the TCPM a copy of the contract check airman's LOA. POIs are encouraged to contact the center's TCPM for assistance with the review and potential approval of a contract check airman. TCPMs are often the POI's best source of information relating to a center's operation and personnel. A sample contract check airman LOA is located on the AFS-210 Web site.

**4)** When an operator requests approval of a training provider's personnel, to act as contract instructor and/or contract check airmen to conduct a portion of their required training, it is the operator's responsibility to ensure those individuals are qualified to conduct the subject training. Prior to authorizing a center's flight instructors or TCE(s) to conduct any portion of an operator's training, the operator must qualify each individual in accordance with the training and testing requirements of their operating rule and provide sufficient evidence of such training and checking to the POI for review and approval.

**5)** Sections 121.414(a)(2), 135.340(a)(2), and 91.1095(a)(2) require an observation of each authorized flight instructor to be accomplished at least once every 24 months. Additionally, §§ 121.413(a)(2), 135.339(a)(2), and 91.1093(a)(2) require an observation of each simulator and aircraft check airman to be accomplished at least once every 24 months.

NOTE: Part 142 has similar requirements for flight instructors and evaluators. However, part 142 requires these observations to be conducted at least once every 12 months. (Refer to §§ 142.53(a)(1) and 142.55(a)(2).)

a) The intent of these regulations is to ensure the continued standardization and quality of each operator's training program by performing periodic observations of each flight instructor and check airman by focusing on the individual's performance in conducting a representative part of a curriculum or training program approved for that operator.

b) A qualified inspector or APD may be requested to observe contract flight instructors and contract check airmen on behalf of the POI. Whether conducting its own training or contracting for training with a training provider, each operator must ensure that all required observations are accomplished and documented. A training center's part 142 observations of their flight instructors may meet the requirements for the center under part 142, but do not meet the requirements for an air carrier under part 121 or part 135. Such an observation might be acceptable for a portion of an operator's requirement under the following conditions:

1. When the training curriculum or curriculum segment conducted by the training center is essentially the same as that of the operator.

NOTE: Training program components may be viewed as "essentially the same" when they comprise identical checklists, operational procedures, and call-outs, and cockpit layouts and flight manuals (fm) which are compatible in the judgment of the operator's POI. Training program components, which relate to like-aircraft types, are dissimilar when they do not meet the criterion for "essentially the same." When differences are too pronounced or too numerous in the judgment of the POI, cockpit layouts and fm must not be viewed as compatible.

2. When the observation is acceptable to the operator's POI.

c) An observation conducted by the FAA is always permissible instead of an observation conducted by an approved check airman or by a designated examiner employed by the operator. An observation by an FAA inspector counts toward the observation requirements of all operators contracting for training program services provided by a training center. POIs and TCPMs may conduct an observation at any time at their discretion. It is anticipated that operators and training centers will exchange information regarding observations of their instructors. However, it is the responsibility of the operator to ensure that all required observations are kept current and are documented.

6) Conduct training center surveillance to determine continued compliance with the operator's approved program.

7) If the operator requests approval of two or more centers, determine that all training, testing, and checking is conducted using the operator's approved curriculum. To ensure standardized training for all of the operator's crewmembers, it is essential that, before authorizing multiple sources of training, the operator provides the POI with a surveillance plan to ensure continued compliance with their approved curriculum by all centers. Each authorized training center must conduct the operator's curriculum as approved by the operator's POI and be

alike in content, training times, maneuvers descriptions, procedures, checklists, and training devices. Crewmember training using differing curriculums for the same aircraft is *not* acceptable. If a training center is providing the same training program to two or more operators at the same center, it may be permissible (with the operator's permission) to interchange crewmembers during the flight training phase. This may only be accomplished providing the individual operator's training curriculums are essentially similar, including aircraft checklist, flows, emergency procedures, and profiles. In this example, two separate but identical programs are being accomplished simultaneously. It is important to ensure that operators may only have one approved training curriculum for each series of aircraft they operate.

**8)** Determine that simulators and/or FTDs are appropriate to, and representative of, the aircraft being operated by the air carrier. Flight training equipment must be specifically qualified and approved for the operator's use, as well as each maneuver, procedure, or crewmember function to be trained.

**9)** Each training facility must be authorized and listed in the operator's OpSpec/MSpec A031.

**10)** Each training curriculum/module approved to be conducted by a training provider must be listed, by curriculum title, in the operator's OpSpec/MSpec A031.

**11)** Review the operator's instructor/check airman standardization program.

NOTE: A sample instructor/check airman standardization program can be found on the AFS-210 Web site.

**12)** Review the operator's training center audit program.

NOTE: Many of the training centers used by operators are located in areas apart from the operator's primary operations base and are often outside of the geographical area of its assigned certificate-holding district office (CHDO). This makes routine surveillance of the training center difficult for POIs and increases the coordination necessary between the CHDO and the FAA office with geographical oversight responsibilities. Under these conditions, it is very important that the POI and CHDO work closely to ensure adequate surveillance of the operator's approved training facilities, equipment, and curriculums.

**13)** Ensure that required airman training records meet regulatory requirements. If requested by the operator the POI may permit the training provider to maintain the operator's crewmember training records. However, the operator must be advised that they (the operator) remain responsible for the security, accuracy, and availability of all required records. Permitting a training center to maintain operators' records does not relieve the POI of required check airman/APD tracking requirements outlined elsewhere in this order or the POI's office Quality Management System (QMS) policies.

**C. TCPMs.** From time to time, TCPMs may be called upon to assist a POI whose operator is using the services of a training center. The TCPM's firsthand knowledge of center

personnel, facilities, equipment, and curriculums is a valuable resource that POIs have come to rely on. This knowledge enables TCPMs to:

1) Provide the POI information regarding the status and approval level of simulators, FTDs, and the installed equipment used by center instructors and TCEs;

2) Assist the POI by providing technical information regarding the center's curriculums, training devices, and facilities; and

NOTE: TCPMs should advise the POI of any status change involving an instructor or TCE that is also approved as a contract check airman for an operator.

3) Assist the POI with the evaluation of TCEs or other training center personnel nominated by the operator to become contract check airmen or flight instructors. The procedures outlined in Volume 3, Chapter 20, will be followed when evaluating center personnel as potential contract check airman candidates.

4) Assist the POI with required surveillance activities including:

a) Potential contract check airmen;

b) Observing contract check airman during the evaluation of the operator's airman to ensure evaluations are objective, accurate, and consistent with the operator's program;

c) Evaluation of required crewmember training records that were authorized to be maintained by the training center; and

d) Other surveillance activities appropriate to the operator's activities at the training center.

NOTE: In all cases, the TCPM's assistance is subject to their offices workload requirements.

**D. Training Center(s).** A training center's roles, responsibilities, and coordination activities include:

1) Participating in the operator's instructor/check airman standardization program to ensure there is a clear understanding between the center and the operator of exactly what portions (by regulation) of the operator's approved curriculums the center will be conducting;

2) Ensuring the operator has received approval from their POI to use center facilities and personnel in the conduct of their approved curriculums;

3) Establishing a naming convention that will enable operator-approved curriculums/courses to be distinguished from center-approved curriculums. Operator programs are not to be referred to as core or specialty, as these terms are only appropriate for TCPM-approved center curriculums/courses;

NOTE: Training centers are not required to list operator names or the operator curriculums/courses in the center's training specifications (TSpec). Only the center's TCPM-approved core or specialty curriculums/courses are required to be listed in the center's TSpecs.

4) Ensuring that all center personnel used to instruct and/or check on behalf of the operator have been appropriately trained, evaluated, and authorized in accordance with the operator's approved curriculums to conduct such activities. This training must include, at a minimum, training in all portions of the operator's curriculums for which the contract instructors/check airman are assigned to conduct on behalf of the operator;

5) Ensuring that sufficient contract instructors are qualified to support the operator's training agreement and requirements;

6) Recommending (not qualifying) center personnel as potential contract check airman. The center must ensure recommended individuals:

a) Have completed the center's approved instructor training program; and

b) Are currently qualified and actively participating in one or more of the center's core curriculums appropriate to the operator's needs;

7) Maintaining the center's simulators and FTDs in accordance with their qualification standards.

NOTE: If a Simulator Component Inoperative Guide (SCIG) has been developed for a particular simulator, and the training agreement with an operator includes simulator training, make sure the SCIG has been approved for operator's use.

8) Advising the operator whenever flight training equipment fails to meet required qualification standards and/or when maintenance problems will restrict training;

9) Ensuring required training records are appropriately maintained and remain readily available to both the Administrator and operator;

10) Ensuring crew pairing policies and procedures are adhered to as it relates to the operator's training and testing/checking; and

NOTE: Crew pairing policies and procedures may be found in Volume 3, Chapter 54, Section 5, paragraph 3-4414.

11) Advising operators of any proposed revisions to the center's curriculums that are being used partially or in total by the operator.

### **3-4414 OUTSOURCED TRAINING PROVIDER APPROVAL PROCESS.**

#### **A. Application to Outsource Required Crewmember Training.**

1) Operators requesting approval to outsource a portion of their required flight crewmember training must submit an application in a form and manner prescribed by the Administrator. The application must contain sufficient detail to enable the Administrator to evaluate the applicant's request. Applications must be submitted a minimum of 60 days prior to the proposed training and contain at least the following information:

- a) A copy of the initial training center audit including an analysis of the training providers curriculums, courseware, procedures, equipment, facilities, and personnel that will be used in the conduct of the operator's training;
- b) A detailed outline, by regulatory reference, of the training elements proposed to be outsourced;
- c) If center personnel will be used as contract instructors to conduct the operator's training the application must contain an appropriate training module developed to qualify centers instructors/TCEs on the operators curriculum;
- d) If center personnel are being requested to act as contract check airmen the application must contain an appropriate training module developed to qualify centers instructors/TCEs as contract check airman for the operator. (See paragraph 3-4415 for complete details.)
- e) A copy of the operator's instructor/check airman standardization program;
- f) A copy of the operator's proposed surveillance plan to ensure the center continues to provide the agreed training;
- g) Proposed method to maintain required crewmember, contract instructors, and contract check airman training records including the methodology proposed to ensure curriculum revisions and an appropriate instructor/check airman read file are maintained;
- h) Other data that the POI may require to evaluate the application.

2) The approval for an operator to use a part 142 training center or other provider in the conduct of their required training is authorized through the issuance of OpSpec/MSpec A031. An initial standardization review must be conducted by the operator and submitted to the POI before any contract training or checking may be conducted. OpSpec/MSpec A031 also requires the operator to conduct ongoing audits of the training center/provider to ensure the training center is continuing to provide training and checking in accordance with the operator's approved program. The initial audit must be completed within 60 days of the commencement of contract training or checking operations. Each audit with evaluation must be presented to the certificate holder's POI for review and acceptance within 30 days after completion. Ongoing audits will be conducted at least every 24 months in order for the operator to continue to use the training center/provider. Guidelines for the scope and content of the operator standardization and audit program are located on the AFS-210 Web site. Additional information is contained in paragraph 3-4416. If an operator does not conduct the required 24-month audit, their authorization to use the training center/provider will cease on the last day of the 24th month following the date of their last audit. Operators may reapply to use the training center/provider

by completing the application process outlined in accordance with the provisions of subparagraph 3-4414A.

3) A sample outline of the modules and elements of an operator's curriculum that are typically contracted out to a training center can be found on the AFS-210 Web site. These curriculum checklists have been developed to provide a guideline for the operator and center in determining which regulatory requirements may be satisfied by the training provider and which will be completed by the operator.

#### **B. Flight Training Equipment.**

1) In order to receive training/checking/testing credit for the use of a simulator or training device, the specific device must be a part of the operator's approved curriculum. The subject curriculum and training device are a part of the outsourced training audit and must include a comparison of the aircraft flown by the operator to the flight training equipment available at the training center. The comparison should encompass the make, model, and series (M/M/S) (and serial number, in some cases) of the aircraft and simulator and include a summary of the flight instrumentation, autopilot, flight management system (FMS) equipment, aircraft modifications (electrical system, hydraulic system, engines, propellers, thrust rev, heads-up display, etc.) applicable to each. Regulations require that the flight training equipment fully meet the requirements of the operator's training program and accurately represent the M/M/S of aircraft flown by the operator including installed equipment. If the flight training equipment available at the training center does not match the operator's aircraft, the operator's program must state how any differences between the aircraft and the simulator or training devices will be addressed and develop an appropriate differences training module.

2) A TCCPM's approval of a center's training devices (FTDs and simulators) for use within the center's approved curriculum does not authorize an operator to use the same devices within the operator's curriculum. The TCCPM's approval only ensures that the training devices are approved to conduct the training, testing, and checking permitted under part 142. In order for an operator to use a center's training devices in support of the operator's curriculum, the operator must include the devices in its training program and have the devices approved by its POI. The operator's POI will evaluate the requirements of the operator's program and make a determination concerning the appropriateness of the center's training devices and their qualification as it relates to the operator's curriculum. POIs may request verification of the flight training equipment authorized for use by a training center by contacting the center's TCCPM.

3) To receive training credit for a particular simulator and/or training device, the device must first be qualified by the National Simulator Program Team (AFS-205) and be assigned a specific level of qualification. TCCPMs and POIs may then approve the device for use by a center or operator respectively, by specific maneuver(s), procedure(s), and crewmember function(s). Approval letters are generally issued to operators and centers specifying the device's use within a specific curriculum. Operators are authorized the use of training devices through the inclusion of the device in their training program.

#### **C. Approving/Accepting a Center's Core or Specialty Curricula for Use by an Operator.**

1) Training centers often submit programs to their TCPM for approval that are targeted for specific customers and/or operators. However, these curriculums must meet part 142 requirements and are either “core” or “specialty” as defined by part 142. Once a curriculum is approved by the TCPM, it is listed in the center’s TSpecs as a core or a specialty curriculum/course. For an operator to use a center-developed curriculum it must submit the curriculum to its POI for approval. The procedure for approving a center-developed curriculum is the same as if the operator had developed the curriculum or paid a consultant to develop the curriculum. The important point to remember is that when the subject curriculum/course is approved by the operator’s POI, it becomes part of the operator’s training program and as it relates to the operator, it ceases to be either a core or a specialty curriculum.

2) Once the subject curriculum/course is approved by the operator’s POI, the center, when conducting training for the operator, should refer to the subject curriculum by the name given to it by the operator. It is important to note that the training center should not refer to the operator’s program as a specialty curriculum. This naming convention is important to clarify oversight and ownership responsibilities for the subject curriculum/course. An operator’s programs are approved by its POI in accordance with the appropriate operating rule.

a) Training center curriculums, both core and specialty, are approved by a TCPM in accordance with part 142 and designed to meet the training, testing, and checking requirements of airmen certification under part 61 or 63.

b) The flightcrew member requirements of parts 91K, 121, and/or 135 differ in numerous respects to part 61 requirements. A TCPM’s approval of a center’s curriculum does not enable an operator to use such curriculum without the specific approval of the operator’s POI.

3) In order for an operator to request a training center’s approved curriculum to be incorporated into their program, the operator must first complete a comparison between the proposed center’s curriculum to their approved curriculum. All differences must be noted and a training module developed to bridge the differences. This training module will be used to qualify the center’s instructors and/or TCEs on the operator’s curriculum. It is the operator’s responsibility to ensure all center instructors and/or proposed contract check airmen receive training on the differences module(s) developed as a result of the curriculum comparison before they may be authorized as contract instructors or contract check airman for the operator.

4) The operator may find that a center’s curriculum may be used without change but that there may be minor differences in operating procedures and/or checklists. As part of the standardization and audit process, the operator must determine all differences between their curriculum and the center’s. If the differences found are minor, the operator’s POI may authorize the operator to develop a briefing guide outlining the differences as a suitable method to provide the training necessary to qualify the center’s personnel. Major differences between the curriculums will require specialized differences or formal retraining of the center’s personnel. In all cases, the operator’s regulations require contract instructors and check airman to be trained in the approved methods, procedures, and limitations for performing required normal, abnormal, and emergency procedures appropriate to the curriculum segment.

5) Operators must have training policies and procedures in their operations manuals or training program that describe their standard operating procedures and type of operation(s). At a minimum, operators that apply to contract a portion of their required crewmember training to an authorized provider must have policies and procedures in place that clearly identify the following:

a) This portion of the operator's program must clearly define these functions and their procedures to ensure adequate training is conducted and recorded.

b) Standard operating procedures, including but not limited to:

- Crew coordination and "call-outs,"
- Maneuvers descriptions and aircraft configuration,
- Cockpit "flows,"
- Checklist procedures,
- Autopilot use and crew coordination,
- Crew resource management, and
- Approach procedures (including approach charts, crew briefing, Electronic Flight Bag (EFB) use, etc.).

6) POIs and operators must be aware that training center-approved curriculum are designed to meet the certification requirements of parts 61 and 63 are not required to include operator-specific items required by part 91K, 121, 125, or 135 training regulations. Part 142 training center-developed curriculums are required to meet the certification requirements of parts 61 and/or 63 and the associated practical test standards. Consequently, part 142 training center curriculums will not comply with the operating rules governing an air carrier and by default do not contain or reference operator-specific requirements or the limitations/authorizations contained within an operator's OpSpecs/management specifications (MSpecs).

7) If an operator is introducing a new aircraft and requesting the adoption of a center's curriculum in support of the introduction, the operator is responsible for ensuring the proposed curriculum meets their operational requirements. Additionally the operator must:

a) Evaluate the proposed curriculum and submit it to their POI for approval/acceptance.

b) Develop a module(s) outlining any operator-specific training required to qualify center personnel as contract instructors and or contract check airman based on the POI's authorized curriculum.

c) If a contract check airman is being proposed, the operator must provide the selected individual with any operator specific training identified during the curriculum approval process.

d) Submit an appropriate contract check airman request to their POI a minimum of 15 working-days prior to the proposed use of the contract check airman.

8) Table 3-122A, Sample—Weight and Balance Curriculum Module Comparison Chart, provides an illustration of the differences that normally occur when an operator completes a comparison and evaluation of a W&B training module that was designed for a part 142 training center against one designed for an air carrier. The table also illustrates the complexities typically encountered by an operator when conducting a curriculum comparison between their approved training program and that of a training center.

9) Column A in Table 3-122A lists the elements normally associated with an approved part 142 weight and balance (W&B) training module. Column B represents a typical part 135 W&B training module. These differences are a result of the requirements of § 135.293(a)(3), which require operators to train and check their pilots on their (the operator’s) method of determining compliance with W&B limitations. Part 142 requires the center’s curriculum to comply with § 61.155(c)(9), which is typically modeled after the manufacturer’s procedures. When confronted with these differences, an operator must decide to either:

a) Train and qualify the center’s instructors to enable them to conduct the operators approved W&B training module; or

b) Providing there is no negative training involved, permit the center to conduct the manufacturer’s weight, balance training, and then conduct a specialized course designed to cover the differences between the center’s curriculum and that of the operator. If the operator chooses to permit the center to conduct the center’s W&B module, the operator would than be required to convene a separate instructional period to train and test the differences between the center’s curriculum and its (operator’s) W&B curriculum. This differences training would be required prior to releasing any crewmember for line operations.

c) As mentioned in subparagraph 3-4414C9)a), the operator could elect to provide W&B training to one of the center’s instructors in those elements of their curriculum that are different from the center’s curriculum. It would then be possible for the qualified instructor to conduct the entire W&B module for the operator’s crewmembers. However, without specified training in the operator’s procedures, the center may only be authorized to provide training and testing in those subjects that are part of the center’s curriculum (Table 3-122A, lines 1 through 4). In either case, operators must develop a quality control program that will ensure their entire curriculum is conducted in accordance with their approved procedures and conducted by qualified individuals. The Instructor/Check Airman Standardization Program located on AFS-210 Web site has been designed to provide assistance in this area.

**Table 3-122A. Sample—Weight and Balance Curriculum Module Comparison Chart**

|   | <b>Part 142<br/>Training Center Curriculum<br/>Module and Elements<br/>[§ 61.155(c)(9)]</b> | <b>Part 135<br/>Operator Curriculum<br/>Module &amp; Elements<br/>[§ 135.293(a)(3)]</b> | <b>Equivalent<br/>Training<br/>Yes/No</b> |
|---|---|---|---|
| 1 | Aircraft Manufacturers Weight & Balance Procedures (Airplane Flight Manual (AFM))           | Aircraft Manufacturers Weight & Balance Procedures (AFM)                                |   |

|  |                                    |  |    |
|--|------------------------------------|--|----|
| 2  | Definitions                        | Definitions  |    |
| 3  | Limitations                        | Limitations  |    |
| 4  | Load Shift/Fuel Management and Use | Load Shift/Fuel Management and Use                       |    |
| 5  |                                    | Operations Specifications (Paragraph A096, A097, A098)   | No |
| 6  |                                    | FAA AC 120-27E   | No |
| 7  |                                    | Carry-on Baggage identification and load and storage     | No |
| 8  |                                    | Passenger Weight determination—average, surveyed, actual | No |
| 9  |                                    | Baggage/cargo weight determination                       | No |
| 10   |                                    | Cabin Configuration and loading                          | No |
| 11   |                                    | Baggage Compartment loading and security                 | No |
| 12   |                                    | Air Carrier Computation method (computer)                | No |
| 13   |                                    | Manifest preparation                                     | No |
| 14   | Testing Module                     | Testing Module   |    |
| <p><b>Row Number:</b></p> <p>1: Topic may comply with the operator's approved curriculum. However, the use of company developed flip charts, computers, "WIZ Wheels", etc., may require specialized training. Differences evaluation required.</p> <p>2 through 4: Topics may comply with the operator's approved curriculum. Differences evaluation required.</p> <p>5 through 13: Topics do not conform to the operator's curriculum.</p> <p>14: Applicable to the particular curriculum. Differences evaluation required.</p> |                                    |  |    |

**10)** The curriculum an operator submits for approval to its POI must contain sufficient detail to assure all required training is addressed. The operator is responsible for submitting the subject curriculum to its POI for review, approval/acceptance, and subsequent inclusion in its training program, before any training is accomplished by the training provider.

**11)** This document will be jointly developed by the training provider and the operator, and will specify the division of all tasks required for training/testing/checking between the training provider and the operator. (Other equivalent methods that specify the division of tasks may be acceptable.) The operator bears the primary responsibility to ensure that all ground and flight training required by their specific operating rule is conducted and appropriately evaluated. The POI's oversight responsibility is to ensure that the operator's compliance efforts are satisfactory. The POI should check sign-offs (certifications) of ground training and all testing for

completeness, and should cross-check those sign-offs against the source document showing the division of tasks. For example, part 135 operators must ensure the training required by § 135.345 is conducted and all subjects required by §§ 135.293, 135.297, and 135.299 are evaluated. A properly executed standardization document between the operator and the training provider will provide guidance to both parties concerning the training and testing/checking obligations for each party. A sample Instructor/Check Airman Standardization Program is located on the AFS-210 Web site.

NOTE: Training centers are not certificated as air carriers or commercial operators and are not issued OpSpecs/MSpecs. The operator-specific requirements of an air carrier's operating regulations make it impossible for a part 142 training center to have a training curriculum approved under those regulations. TCPMs may only approve training center curriculums that comply with part 142. Training centers may develop curriculums designed to comply with the operating rules of an air carrier; however, the curriculums cannot be approved as "meeting" the requirements of those parts. Training center instructors and evaluators are likewise qualified in accordance with a center's approved curriculums and therefore cannot conduct an air operator's training without first being qualified by an air operator before conducting any of the operator's required training. (Refer to §§ 91.1075, 91.1089, and 91.1093; §§ 121.411 through 121.414; and §§ 135.337 through 135.340.) Depending on the content of a particular center's instructor/TCE training curriculum, an operator may be able to credit a portion of the center-provided training as meeting some of their required instructor/check airman training requirements.

**12)** When a center revises one of their core or specialty training curriculums that originally formed the basis of an operator's approved curriculum, the center should be encouraged to advise the operator of the revision. However, it is important to understand that revisions to a center's core or specialty curriculums, which were used as the basis of an operator's training curriculum, does not automatically create a revision to the operator's POI-approved course. The adoption of such changes is subject to the operator's evaluation and approval by its POI. Center revisions that are considered appropriate for the operator's program may be incorporated by the operator if approved by the operator's POI. Likewise, the operator may make changes to its curriculum, in which case they must notify the center and ensure that all contract instructors and contract check airman are trained in the new procedures (differences). Operators must be especially vigilant to ensure that changes to the training center's core or specialty curriculums do not affect the training they receive.

#### **D. Air Carrier Training at Multiple Training Centers.**

**1)** Occasionally, an air carrier will request that training be conducted at two or more training centers. These centers may be owned by the same parent company, satellite centers of the same certificate holder, or may be training centers operated by different companies. It is common practice for training centers operated by different owners/companies to take varied approaches to curriculum design and development for the same aircraft M/M/S. These differences often include training equipment, training hours, maneuvers description, operating procedures, and checklists. When evaluated individually each variant may be perfectly

acceptable for the specific aircraft; however, as training products for an air carrier these differences, although subtle, are not consistent with the standardization requirements demanded by air carrier regulations. To ensure standardized training is provided, it is essential that before authorizing the use of multiple sources of training, the air carrier and subsequently the POI determine that the same curriculum and syllabus, including courseware, flight training equipment, maneuver descriptions, procedures, checklists, etc., will be conducted by each provider.

2) Subtle differences between or among training providers may not create standardization difficulties for non-certificated operators. However, because air operators are required to have their own approved programs, differing curriculum between or among training providers is not authorized. Additionally, an operator is only permitted to have one training program/curriculum for each aircraft type in its fleet; therefore, training conducted by different centers will present a standardization problem if not properly monitored and managed by the operator.

3) To qualify a center's personnel to conduct an operator's training curriculums will require the operator to conduct an evaluation of the center's curriculums to determine what, if any, differences exist between the two and provide center instructors and evaluators training in those differences. This process must be repeated for each center authorized to conduct training for the operator. If a contract check airman is requested, the additional training appropriate to the operator's check airmen training will also have to be completed.

4) If POIs have reason to believe that multiple centers can provide the quality training required by the operator's approved curriculum, they may authorize two or more facilities or training companies to conduct the subject training. However, if the POI suspects that an operator curriculum cannot be adequately presented at multiple centers due to differing delivery methods, FTDs, simulators, training hours, maneuver descriptions, qualified personnel, etc., and/or the operator's ability to adequately monitor and audit the training being provided, the POI and the operator have the responsibility to limit the number of training providers.

#### **E. Training Policy and Procedures.**

1) Operators are required to develop and document, as part of their approved program, adequate procedures and policies to ensure all training providers conduct the operator's crewmember training as approved. These procedures may be part of the operator's manual used by the certificate holder's flight personnel in conducting its operations and/or contained in the operator's approved training program.

2) Operators must establish training policies and procedures to ensure crewmembers are trained and evaluated in accordance with the policies and procedures that represent the manner in which it conducts its aircraft operations. It is unacceptable to have differences between training/checking and actual aircraft operations or between individual crewmembers.

3) POIs are not to approve requests for outsourced training unless the operator's program contains appropriate policies and procedures to ensure the training conducted by the authorized training provider(s) is in accordance with the operator's approved program.

NOTE: Operators must ensure that approved training providers are provided at least one copy of their operating manual(s), including the revision service for such manuals, which cover the particular areas that the training provider has been approved to conduct. The operator must also ensure the training provider maintains a “read file” specific to the operator that is available to all contract instructors, contract check airmen, and the operator’s crewmembers. This read file must contain information pertinent to their flight operations and crewmember operating procedures. See the Instructor/Check Airman Standardization Program on the AFS-210 Web site for additional information.

4) An operator that determines a center-developed curriculum is suitable for its use must receive its POI’s approval to integrate the subject curriculum into its training program. See subparagraph 3-4414C for policies and procedures for the integration of a center’s curriculum into an operator’s program.

#### **F. Crew Pairing.**

1) Training centers often provide services to air operators which must meet requirements of particular operating rules (i.e., parts 91K, 121, and 135). Under these rules, training programs include checklists, callouts, profiles, approach procedures, and other features that are approved for the specific air operator by its assigned POI. Occasionally an operator may not be able to assign a complete crew for its training/checking/testing activities at part 142 training centers. When this situation occurs, the training center may provide a qualified crewmember that meets the requirements outlines in the operator’s training program.

2) The FAA promotes the crew concept in air carrier training and checking to ensure that crew coordination and other flight management issues are adequately and appropriately addressed. Flight training must address the performance of duties as Pilot Flying (PF) and pilot monitoring (PM) as described in the air operator’s approved procedures. To meet both of these seat-dependent training needs, each required cockpit crew position must be occupied by a qualified crewmember.

3) It is desirable that each flight training session be scheduled so that two pilots from the same company or air operator may be trained during a single flight training session. The preferred crew pairing is a pilot in command (PIC) and a second in command (SIC). Other acceptable crew pairings are two PICs or two SICs employed by the same certificate holder. Each pilot receiving training should have completed the appropriate aircraft ground training, including basic indoctrination, prior to beginning the flight training segment.

4) Permissible crew pairings. Some air carriers often operate with small pilot rosters or with pilots who are widely dispersed. Providing the operator’s training program does not otherwise restrict crew pairings for flight training/checking/testing in a simulator at a training center, the center may use the following guidelines when determining who may be considered an appropriate crewmember.

a) An appropriate crewmember must be one of the following:

1. One of the air carrier’s line qualified pilots,

2. One of the air carrier's pilots undergoing training for the same aircraft, or
3. A contract flight instructor (airplane or simulator) or a contract check airman (airplane or simulator) who is authorized to serve in that air carrier's training program.

b) The following conditions apply when a part 135 air carrier pilot is training in an FAA-approved training program for another part 135 air carrier, whose training program is essentially similar.

- When the training curriculums are not essentially similar, pilots may not be paired; similarly, when operational differences between carriers are too pronounced or too numerous, at the discretion of the appropriate POI, pilots may not be paired.
- Each air carrier pilot must be trained in accordance with the training program approved by the POI of his/her own air carrier.
- Minimum equipment lists (MEL), OpSpec/MSpecs, and other features specific to each air carrier's operations must be addressed during flight training.
- When only one pilot is receiving flight training, the other pilot seat must be occupied by a person who is line qualified or line familiar in the specified duty position (see Advisory Circular (AC) 120-35, Line Operational Simulations: Line Oriented Flight Training, Special Purpose Operational Training, Line Operational Evaluation, current edition, for definition of terms), unless the flight training is being conducted for single pilot operations.

NOTE: Training programs may be viewed as essentially similar when they include the same curriculum, the same checklists, and the same callouts and include cockpit configurations, operational procedures, and fms which are compatible in the judgment of the appropriate POI.

c) Pilots must have completed the operator's applicable ground training curriculum segments prior to starting the flight training curriculum segments.

5) Pairing pilots in flight training and evaluation for operations under different parts. When pilots from different operators are paired in training programs that are essentially similar, the operator-specific features (such as MELs and OpSpecs/MSpecs) of each operator must be addressed. Pilots in training for part 135 operations should not routinely be paired with pilots training for operations under part 91. These crew pairings should be avoided in favor of the pairings outlined in subparagraph 3-4414F4). However, such crew pairings are permissible provided the following conditions are met:

- The part 91 pilot must conform to the training program of the part 135 pilot in every respect. Specifically, checklists, profiles, approach procedures and callouts must be those used in the training program of the part 135 pilot (not vice versa), and the part 91 pilot must understand and apply Crew

Resource Management (CRM) principles in accordance with the air transport pilot practical test standards.

- Each certificated air operator's crewmember must complete the appropriate air operator's evaluation module. Part 135 pilots may support the part 91 pilot's training activities as appropriate.
- Part 91 pilots paired with an air operator crewmember must use the operator's approved curriculum. In these cases, the TCPM must either concur with the part 91 pilot's use of the air operator's curriculum to complete required training and currency, or approve a documented process submitted by the training center that ensures all requirements described herein are met. The training center should maintain records of such pairings in sufficient detail to allow FAA inspectors to easily determine compliance with the applicable regulation, operator's crew pairing procedures (if provided) and these requirements.
- The part 91 pilot must have received differences training in the features of the part 135 training curriculum that distinguishes it from the part 91 training curriculum. That training should also include the operator's OpSpecs and operational control procedures.

NOTE: In crew pairings involving pilots of different part 135 operators or pilots operating under different operating rules (parts 135 and 91) POIs and TCPMs must be especially vigilant. The part 135 operator's training program must not be distorted or diminished in order to accommodate dissimilar training needs. If the integrity of the air carrier training program cannot be upheld the crew pairing must not be permitted.

#### **G. Recordkeeping.**

1) Regulations require an operator to maintain training and qualification records for each crewmember, flight instructor, and check airman. This requirement includes contract instructors and contract check airmen employed by training providers that are authorized to provide training and checking for the operator. The means and methodology of maintaining required crewmember records must include an acceptable process to record training, checking, and qualifications of the operator's crewmember training conducted by an outsourced training provider. The operator's training program should contain a description of their recordkeeping system as well as describing what records are to be used to comply with each regulatory requirement. If the operator wishes to use an electronic recordkeeping system, AC 120-78, Acceptance and Use of Electronic Signatures, Electronic Recordkeeping Systems, and Electronic Manuals, current edition, provides guidance for the evaluation and approval of these systems.

2) Operators and training providers must establish and document procedures to ensure they have a clear understanding of their individual responsibilities for complying with required training and testing/checking recordkeeping requirements. These procedures must include identification of responsible personnel and approved location(s) where specific records will be maintained.

3) Training conducted by center personnel must be documented in accordance with the operator's approved system. Center personnel acting as contract instructors and/or contract check airman for the operator must also be trained in the operator's records system.

4) Training centers are not required under part 142 to maintain an air carrier's crewmember training records when the training was accomplished in accordance with the operator's approved program. Training centers are only required to maintain the records required to support the training accomplished under part 142 that leads to airman certification or proficiency required by part 61 or 63. An operator's crewmembers are not trained and evaluated in accordance with part 142. They are trained and evaluated in accordance with the operator's operating regulations and approved curriculums. Therefore, the responsibility for record maintenance remains with the operator. Training centers that have been authorized to provide training for an operator are considered to be an integral part of that operator's training program. In that context, FAA policy permits the center to be used as a suitable location for required records if approved by the operator's POI. Many training centers provide a large portion of an operator's training and in some cases are the sole providers of such training, which may make the center a logical location for such records.

5) Part 142 requires training centers to maintain the training records of their instructors and TCEs. When these individuals are also approved as contract instructors and/or contract check airman for an operator, it may also make sense for the operator to have its instructor and/or check airmen records maintained by the center. It is, however, the responsibility of the operator to ensure that all crewmember records are readily available for inspection as required by applicable regulations.

6) Operators must ensure that training records developed and maintained by their training providers are available in a timely manner. Records of crewmember training and checking are required to be furnished to the operator upon completion (within 24 hours) of any training and/or checking in order to enable the operator to determine qualifications for crew assignment(s). Training and qualification records for contract instructors and contract check airman must also be made readily available to the operator.

7) In many cases, the TCPM will be the best qualified individual to assist the POI with required inspections, proficiency checks, and observations of assigned operators. Properly maintained records will also enable the TCPM and training centers to provide information on instructors and TCEs to other operators that may need instructor and evaluator assistance.

8) A TCE who is authorized as a contract check airman may be approved by one or more POIs to conduct checks for multiple operators that have contracted with a training center. This may occur when multiple operators of the same aircraft type have contracted for training at the same center and are using essentially the same curriculum.

9) Although not required, training centers that maintain contract check airman records for operators may be a good source of information for other operators who are evaluating center personnel as potential contract check airman.

**10)** Training centers must have a process whereby they keep customers apprised of all training or checking conducted on the operator's behalf. Additionally, the center must notify the operator within 24 hours if there is a job functions status change with a TCE or instructor who is also a contract check airman or contract flight instructor for the operator that may affect the individual's check airman or instructor status with the operator.

**11)** TCPMs are responsible for maintaining eVID information regarding the training center, its instructors, and evaluators. POIs are responsible for maintaining eVID files pertaining to each training center employee authorized as a contract check airman.

### **3-4415 REQUIREMENTS TO AUTHORIZE CONTRACT FLIGHT INSTRUCTORS AND/OR CONTRACT CHECK AIRMEN FOR AN AIR OPERATOR.**

**A. Requirements.** Sections 91.1049, 121.401(a)(4), 121.402(b)(4), 135.323(a)(4), and 135.324(b)(4) require operators to provide enough flight instructors and check airmen to conduct the flight training and flight checks required by the applicable operating rules.

**1)** The determination of a "sufficient" number of contract check airman and/or contract instructors for a particular operator will require a careful evaluation of the following:

- Number of aircrew program designees authorized by the FAA and employed by the operator;
- Geographic location of the operator with respect to available FAA support;
- The operators understanding that they are required to provide surveillance and supervision of their contract instructors/check airman;
- Availability of simulators and location relative to the operators crewmember domiciles; and
- Operators required crewmember training and evaluation workload.

**2)** There is no fixed formula that will definitively answer the question of how many contract check airman/instructors are appropriate. Maintaining an equitable balance between the operator's ability to provide required management oversight and surveillance, while meeting their evaluation requirements without compromising standardization or safety, is a primary concern.

**B. Qualification and Training Requirements.** The qualification and training requirements for individuals to become contract flight instructors and/or contract check airmen for an air carrier are outlined in the specific regulations governing the type of operation (specifically part 91K, part 121 subpart N, and/or part 135 subpart H, as appropriate). Training center instructors and evaluators are trained and qualified under part 142, which does not mirror the instructor and/or check airmen qualification requirements of an air carrier. Although some of the instructor/evaluator training required by part 142 may be considered equivalent to the instructor/check airmen training required by an air carrier, the two currently do not align. The differences between these two regulatory requirements will generate additional training requirements for training center instructors and evaluators selected to provide training and checking services for operators.

**C. Instructors.** Consider the case of a part 142 training center flight instructor (simulator) who is qualified to provide instruction under the training center's approved core curriculum for a particular aircraft.

1) In order for a training center instructor to serve as a flight instructor for an air carrier, the individual must be trained and qualified to instruct in each training segment, module, or element of the air carrier's curriculum that the instructor will be responsible for providing to the air carrier's crewmembers. Current policy does not require center instructors to complete the carrier's entire approved training program or curriculum provided:

a) The individuals are limited to conducting only the training elements of the operator's curriculums that they have been specifically trained and qualified to conduct and have been authorized by the operator; or

b) The individual has had previously received the same training, proficiency/competency checks, and observations in the same M/M/S aircraft for another air carrier operating under the same part.

2) Situations where an air carrier adopts a training center's core or specialty curriculum(s) and the POI approves these curriculums as part of the air carrier's training program would also mitigate some of the training required by the operator to qualify the subject instructor. In this situation the only training the air carrier would be required to provide the center's instructor(s) would be limited to any differences that exist between the training center's curriculum(s) (as approved by the TCPM) and the air carrier's training curriculum (as approved by the carrier's POI).

NOTE: In such cases, it is the *air carrier's responsibility* to identify each difference between the carrier's approved training curriculum (including curriculum content, checklists, and procedures) and the training center's curriculum. The air carrier must then develop and provide their POI a training module to qualify the center's personnel on all noted differences. This differences training module must be approved by the POI prior to conducting the subject training.

3) The air carrier's POI has the responsibility to determine if the manner and method proposed by the air carrier to train and qualify the center's personnel on curriculum differences, will meet the operator's training requirements.

**D. Review.** To ensure the center's personnel meet the operator's check airman standards, the operator will need to review the individual's training history and qualifications. Elements of the center's instructor/TCE training curriculums that the operator finds equivalent to their training program may, with the POI's approval, be credited toward the completion of the operator's instructor/check airmen curriculums. If the center's curriculum has been submitted to the POI for approval and is approved as meeting the requirements of the operator's curriculum, other than the operator-specific items, no additional training for the center's personnel would be required. Any differences or deficiencies noted will require the operator to develop a training

module to ensure all regulatory requirements are met in order to qualify the center's personnel as contract check airmen.

1) In addition to the instructor qualification and testing requirements outlined in subparagraphs 3-4415 B and C (above), operators must accomplish the following to qualify an individual as a contract check airman:

a) Evaluate the instructor's/TCE's credentials to ensure he/she meets the certificate holder's requirements to become a contract check airmen.

NOTE: Individuals must have at least one year of experience as a center instructor or TCE in the make and model aircraft in order to be considered as a contract check airman for an operator. POIs are encouraged to contact the center's TCPM for assistance with the review and potential approval of contract check airman. TCPMs are often the POI's best source of information relating to a center's operation and personnel.

b) Evaluate the center's instructor and TCE training curriculum by comparing it to the operator's check airman curriculum to determine the differences training required to qualify the center's personnel as a contract check airman.

c) Develop an appropriate differences training module(s) to include the operator-specific elements of the check airmen qualification and training/checking regulations to qualify the center's instructor/TCE as a contract check airman.

d) Submit the contract check airmen training module(s) to its POI for acceptance/approval.

e) If the training course is approved, ensure the course is provided to all contract check airmen candidates.

f) Provide the POI with complete training records and submit the individual's name and résumé for review and approval in accordance with Volume 3, Chapter 20.

g) If the applicant is approved as a contract check airman the POI will make the necessary eVID entries.

NOTE: POIs should notify the center's TCPM whenever they authorize one of the center's personnel to act as a contract check airman. This may be accomplished by forwarding the TCPM a copy of the check airman's LOA. A sample contract check airman LOA is located on the AFS-210 Web site.

**E. Categories of Authorization.** The standard categories of authorization for check airmen currently shown in Volume 3 do not provide the level of specificity required for the approval of contract check airmen. For example, an operator's check airman, qualified as a line captain may be authorized as a simulator only check airman permitting them to administer both § 135.293(a)(1 through 8) as well as § 135.297 evaluations. A contract check airman who is only qualified in the aircraft-specific modules of an operator's curriculum may be authorized to

conduct simulator-only evaluations; however, he or she would be limited, due to his or her training, to evaluations of § 135.293(a)(2) and (b) and § 135.297 evaluations. Unless the contract airman is qualified in the operators complete curriculum for the specific aircraft, he or she may not be authorized to conduct the elements required by § 135.293(a)(1) or (a)(3 through 8). Other restrictions may also apply depending on the training and qualification provided by the operator. A sample contract check airmen LOA is located on the AFS-210 Web site.

#### **F. Training of Instructors and Evaluators.**

1) Because the typical training program offered by the training center currently does not include all of the ground training subjects contained in an operator's curriculum, it follows that neither the trainees nor the instructors and evaluators themselves receive training in those subjects. It is important to ensure all training center instructors and evaluators are trained and evaluated in all subjects that the center is contracted to conduct. For example, because the typical training program offered by the training center currently does not include ground training in the subjects contained in § 135.293(a)(1) and (a)(4–8), it follows that neither the trainees nor the instructors and evaluators themselves receive training in those subjects—which ignores the training requirements of §§ 135.337(b)(2) and 135.338(b)(2). Therefore, a training center evaluator typically is not qualified to evaluate subjects other than those contained in the center's core curriculum which equates to § 135.293(a)(2) and potentially (3). Similarly, a trainee should not be evaluated in those subjects by individuals not qualified in the operator's procedures.

NOTE: To preclude any confusion concerning a contract check airman's authorization, the POI must specify in each contract check airman's LOA what specific subjects the check airman is authorized to test and check.

2) Particular caution must be exercised to ensure that individuals being nominated by an air carrier to become contract instructors/check airmen have a good understanding of the issues typically faced by crewmembers on a daily basis, many of which are learned only through the completion of an air carrier's initial new hire training curriculum. Knowledge of an air carrier's operational environment becomes very important when instructors/check airmen may be required to draw upon that knowledge to ensure that the quality of training and evaluations demanded by the regulations is not compromised. Non-aircraft-specific issues such as flight following/dispatch, MEL/CDLs, cabin crew/cockpit interactions, hazmat, security, company standard operating procedures (SOP), etc., play an important role in a crewmember's training; especially during Line-Oriented Flight Training (LOFT) events. To effectively function as an air carrier instructor/evaluator, individuals must have a good understanding of these issues.

3) Before an air carrier authorizes a contract instructor or nominates an individual to become a contract check airman, the air carrier must provide its POI with evidence that these individuals have completed at least one air carrier's initial training and qualification curriculum as a flight crewmember for an operator certificated under the same 14 CFR part. Providing the operator and the assigned POI find this training and qualification acceptable, individuals may be considered to have met the non-aircraft-specific training requirements to become a contract instructor/check airman. The completion of an operator's line check requirement(s) is not required. Following the completion of an appropriate differences training curriculum, the subject individuals may be authorized as contract instructors and nominated to become contract check

airman. This process should preclude an individual from conducting training and checking in an air carrier environment without ever having had the benefit of, at a minimum, the training required to qualify an individual to act as required crewmember for an air carrier.

**G. Proficiency Evaluations.** The proficiency evaluations required by an air carrier to qualify and maintain the currency of its check airmen are also applicable to center personnel that are being nominated as contract check airmen for the operator.

NOTE: TCPMs are only required to verify that the center's TCEs receive annual training on the conduct of part 61 certification functions in accordance with part 142 subpart C, relating to the curriculums approved for the training center's use. As outlined above, this training and checking does not qualify an individual to act as an operator's check airman. Operators must complete a detailed comparison between its check airman curriculum and that of the training center's TCE curriculum to determine the extent of the additional training they must provide to qualify the center's personnel to act as a contract check airman on their behalf. If this comparison indicates that the operator's training programs are identical, other than the operator specific items, no additional training for the center's personnel is required. Any differences noted between the curriculums will require the operator to develop a training module to qualify the center's personnel as a check airman. This module must be presented to the operator's POI for approval/acceptance.

**H. Contract Instructors/Check Airmen.** Training center employees that have been qualified by an operator to serve as a contract instructor/contract check airman may be considered qualified to act in the same capacity for another operator provided that:

- 1) Both operators are certificated under the same 14 CFR part.
- 2) Both operators are operating the same M/M/S of aircraft with identical configurations.
- 3) Both operators are using identical training curriculums, including checklist and operating procedures.
- 4) The requesting operator finds the subject individual acceptable as a contract instructor/check airmen.
- 5) The subject instructor/check airman has met the operating or observation experience requirements for at least one operator for which they are providing services. For example, if a training center instructor is qualified to provide instruction in a particular aircraft for three different operators, the instructor may be considered to have met the initial and recurrent line operating or observation requirements for all three by remaining qualified in one of the operator's programs.

NOTE: In all cases, the acceptance of an instructor/check airmen's qualification by another operator is subject to the approval of the requesting operator's POI.

**I. Reports.** The POI should arrange to have the operator provide the POI with a periodic report of each check airman's checking activities, including a pass/fail rate, to coincide with the POI's periodic review (annual, semiannual, or other). POIs may arrange for these reports to arrive at a time that meets the POI's needs. A contract check airman should be active enough to retain the required knowledge and skills. This activity level may vary depending on the contract check airman functions and other operators for which he/she is authorized check airman activities, the size of the operator, and the number of approved check airmen. Usually a check airman should conduct at least eight authorized check airman activities during a 12-month period (including supervision of Operating Experience (OE)). The POI should specifically reassess the operator's need for those check airmen whose records indicate low activity levels.

### **3-4416 OUTSOURCED TRAINING PROVIDER AUDITS AND ASSOCIATED OPSPEC/MSPEC PROCEDURES.**

**A. Self-Audit Program.** The FAA requires a mandatory self-audit program for operators certificated under the provisions of parts 119 and 91K who contract with a training provider to conduct a portion of their required crewmember training. Such training arrangements are informally known as outsourced training. POIs will use OpSpec/MSpec A031 to record FAA approval of these contract training arrangements.

**B. Operator Responsibility.** The FAA is often limited in its ability to oversee an air carrier's training operations conducted under contract by a training provider(s). This oversight is the primary responsibility not of the FAA but of the operator itself. The operator holds an air carrier certificate as a privilege granted by the Administrator on the presumption that the operator will continually maintain the highest safety standards, including flightcrew training standards. The operator must ensure that its flightcrew training conducted by a contractor continually meets the requirements set by regulations and the standards contemplated at the time of initial certification.

NOTE: AC 120-59, Air Carrier Internal Evaluation Programs, current edition, recommends a voluntary self-audit strategy for air carriers that may be readily adapted to continuing analysis and surveillance of outsourced flightcrew training.

**C. Self-Audit and Summary Report.** The self-audit and summary report cycle outlined in this section may be used as the first phase of a plan to implement more effective operator-driven quality assurance where outsourced flightcrew training is concerned. The cycle must be conducted at least every 24 months in accordance with OpSpec/MSpec A031, and should be conducted at any time that a major change affects the operator's outsourced flightcrew training.

**D. POI Verification.** POIs must verify that their operators arranging with training providers to conduct contract training for their crewmembers, otherwise known as outsourced training, will accomplish the following activities.

#### **1) Self-Audit.**

a) Training Program Components: Adherence to Approved Program. The operator must document that the training program delivered by the training provider is identical

to the training program approved for the operator's use by the POI. The documentation will address at least the following:

- Manuals;
- The format and content of curriculums, curriculum segments, training modules, and documents depicting flight maneuvers and procedures;
- Courseware;
- Facilities; and
- Qualifications of instructors and check airmen.

b) Training Curriculums: Adherence to Approved Program. The operator must audit curriculums and document that those curriculums presented by the training provider adhere to the curriculums contained in its FAA-approved training program. The documentation must address at least the following, including ground training and flight training curriculum segments:

- Initial new-hire training;
- Upgrade training;
- Transition training;
- Recurrent training;
- Refresher training (121 only);
- Initial equipment training;
- Requalification training; and
- All other approved training such as differences, related aircraft differences (121 only), hazmat, security, and crew resource management, as appropriate.

c) Flight Training and Testing/Checking: Adherence to Approved Program. The operator must observe all contract instructors and contract check airman who are conducting required instruction and evaluations on their behalf by center personnel. The operator must document that regulations contained in §§ 91.1089 through 91.1095; §§ 121.411 through 121.414; or §§ 135.337 through 135.340, as appropriate, are being met and that approved standards are being maintained. Documentation must address at least the following, as applicable:

- Certification flight checks;
- Proficiency checks, and instrument proficiency checks (parts 91 and 135 only);
- Flight checks (part 121 Flight Engineer (FE))
- Flight training in lieu of the proficiency check, including line-oriented flight training;
- Competency checks;
- Maneuver validation (Advanced Qualification Program (AQP)); and
- Line operational evaluations.

d) Training Records: Completion of All Approved Training. The operator must review required training and testing records to ensure compliance with their operating rule. This

review must cover all of the operator's crewmembers, including pilots, FEs, and Flight Attendants (F/A) who have received outsourced training since the last review cycle. The operator must document that each crewmember has successfully completed all of the required components of training and checking comprised by its approved training program.

**2) Summary Report.** The operator must prepare a report, summarizing the findings of its self-audit. A sample report is on the AFS-210 Web site. This sample report form may be used to compile self-audit findings and to submit findings to the POI as a summary report. Another form mutually acceptable to the operator and the POI may be used instead. The summary report must be signed by the operator's director of operations. In all instances that discrepancies are found between the training program delivered by the training provider and that which is approved by the FAA, the operator must propose effective remedies. Those remedies must be included in the summary report and must be addressed under the following categories:

- a) Immediate corrective action:
  1. Action already taken, showing dates, and
  2. Action planned, showing target dates.
- b) Long-term corrective action, showing target dates; and
- c) A strategy for ensuring continuing prevention of recurrence.

**3) OpSpec/MSpec A031.** All affected operators are required to be issued OpSpec/MSpec A031. Any training provider conducting contract training, within the meaning of this section, must be approved by the POI and recorded in OpSpec/MSpec A031.

**E. Program Discrepancies.** An operator contracting for training must address any training program discrepancy and undertake corrective action as soon as the discrepancy becomes known. When the operator's own remedies are insufficient, the POI must take additional steps as deemed necessary and appropriate, in accordance with applicable provisions of Title 49 of the Code of Federal Regulations (49 CFR), 14 CFR, FAA Order 8900.1, and FAA Order 2150.3, Compliance and Enforcement Program, current edition.

NOTE: For guidance in accomplishing an Internal Evaluation Program (IEP) evaluation, see AC 120-59, and Volume 3, Chapter 28, Section 1.

**F. New Outsourced Training Arrangements.** When approving new outsourced training arrangements use the regular Program Tracking and Reporting Subsystem (PTRS) recording procedures for the appropriate job function and enter "Contract" in the "National Use" field.

**RESERVED.** Paragraphs 3-4417 through 3-4432.

**VOLUME 3 GENERAL TECHNICAL ADMINISTRATION****CHAPTER 58 MANAGEMENT OF AVIATION FATIGUE****Section 2 Understanding and Applying Part 117**

**3-4690 GENERAL.** This section provides guidance on applying the requirements prescribed in Title 14 of the Code of Federal Regulations (14 CFR) part 117 for managing and mitigating fatigue.

**3-4691 UNDERSTANDING FATIGUE.** Fatigue is characterized by a general lack of alertness and degradation in mental and physical performance. Fatigue manifests in the aviation context not only when pilots fall asleep in the cockpit in flight, but perhaps more importantly, when they are insufficiently alert during take-off and landing. Reported fatigue-related events have included procedural errors, unstable approaches, lining up with the wrong runway, and landing without clearances.

**A. Types of Fatigue.** There are three types of fatigue: transient, cumulative, and circadian.

1) Transient fatigue is acute fatigue brought on by extreme sleep restriction or extended hours awake within 1 or 2 days.

2) Cumulative fatigue is fatigue brought on by repeated mild sleep restriction or extended hours awake across a series of days.

3) Circadian fatigue refers to the reduced performance during nighttime hours, particularly during an individual's Window of Circadian Low (WOCL) (typically between 0200 and 0600.)

**B. Fatigue Symptoms.** Common symptoms of fatigue include:

- Measurable reduction in speed and accuracy of performance,
- Lapses of attention and vigilance,
- Delayed reactions,
- Impaired logical reasoning and decision-making, including a reduced ability to assess risk or appreciate consequences of actions,
- Reduced situational awareness, and
- Low motivation to perform optional activities.

**C. Factors Contributing to Fatigue.** A variety of factors contribute to whether an individual experiences fatigue as well as the severity of that fatigue. The major factors affecting fatigue include:

1) **Time of Day.** Fatigue is, in part, a function of circadian rhythms. All other factors being equal, fatigue is most likely and, when present, most severe between the hours of 0200 and 0600.

**2) Amount of Recent Sleep.** If a person has had significantly less than 8 hours of sleep in the past 24 hours, he or she is more likely to be fatigued.

**3) Time Awake.** A person who has been continually awake for a long period of time since his or her last major sleep period is more likely to be fatigued.

**4) Cumulative Sleep Debt.** For the average person, cumulative sleep debt is the difference between the amount of sleep a person has received over the past several days, and the amount of sleep he or she would have received with 8 hours of sleep a night.

**5) Time on Task.** The longer a person has continuously been doing a job without a break, the more likely he or she is to be fatigued.

**6) Individual Variation.** Individuals respond to fatigue factors differently and may become fatigued at different times, and to different degrees of severity under the same circumstances.

**D. Managing Fatigue.** Scientific research and experimentation have consistently demonstrated that adequate sleep sustains performance. For most people, 8 hours of sleep in each 24-hour period sustains performance indefinitely. Sleep opportunities during the WOCL are preferable because sleep that occurs during the WOCL provides the most recuperative value. Within limits, shortened periods of nighttime sleep may be nearly as beneficial as a consolidated sleep period when augmented by additional sleep periods, such as naps before evening departures, during flights with augmented flightcrews, and during layovers. Sleep should not be fragmented with interruptions. In addition, environmental conditions such as temperature, noise, and turbulence impact how beneficial sleep is and how performance is restored. When a person has accumulated a sleep debt, recovery sleep is necessary to fully restore the person's "sleep reservoir." Recovery sleep should include at least one physiological night; that is, one sleep period during nighttime hours in the time zone in which the individual is acclimated. The average person requires in excess of 9 hours of sleep a night to recover from a sleep debt.

**E. Additional References.** More information on fatigue may be found in the current edition of the following documents:

- Advisory Circular (AC) 120-100, Basics of Aviation Fatigue;
- AC 117-1, Flightcrew Member Rest Facilities;
- AC 117-2, Fatigue Education and Awareness Training Program;
- AC 117-3, Fitness for Duty; and
- Clarification of the Flight, Duty, and Rest Requirements of Part 117 (Docket No. FAA-2012-0358.)

### **3-4692 PART 117 APPLICABILITY.**

**A. Passenger-Carrying Operations.** Part 117 applies to all passenger-carrying operations conducted by 14 CFR part 121 certificate holders regardless of whether the kind of operation being conducted is domestic, flag, or supplemental. Part 117 does not prescribe different limitations for each kind of operation being conducted under part 121. Therefore, if a

part 121 certificate holder conducts passenger-carrying operations, that operation must be conducted in accordance with the provisions prescribed in part 117.

**B. All-Cargo Operations.** For those part 121 certificate holders conducting all-cargo operations, the certificate holder may continue to conduct its operations under the provisions prescribed in part 121, subparts Q, R, or S, as applicable. However, a part 121 certificate holder conducting all-cargo operations may opt to conduct its operations under the provisions prescribed in part 117. In order to prevent manipulation of this voluntary provision, certificate holders who wish to operate their all-cargo operations under part 117 cannot pick and choose specific flights to operate under this rule. Instead, the certificate holders conducting all-cargo operations wishing to operate under part 117 must select at least one of the following types of operations to operate under part 117:

- 1) All of their all-cargo operations conducted under contract to a U.S. Government agency; or
- 2) All of their all-cargo operations not conducted under contract to a U.S. Government agency.

**C. Mixed Types of Operations.** Part 121 certificate holders that conduct mixed types of operations (i.e., passenger-carrying and all-cargo operations) must comply with the provisions of part 117 for each passenger-carrying operation being conducted. For all-cargo operations, the certificate holder may continue to conduct its all-cargo operation under part 121, subparts Q, R, or S, as applicable. Instead of compliance with part 121, subparts Q, R, or S, the certificate holder may elect to apply the requirements and limitations prescribed in part 117 to its all-cargo operations. If, however, the certificate holder transports one passenger for compensation or hire on a flight, that flight must be conducted under the provisions of part 117. Certificate holders conducting mixed types of operations must develop a method acceptable to the Administrator for tracking and recording the flightcrew members' flight, duty, and rest times. This recordkeeping system must be applicable for both parts 117 and 121 to ensure compliance with the applicable part under which the flight is operated. These records must be made available to the Administrator for inspection as a means of demonstrating compliance with the applicable rules.

**D. Part 117 Limitations as Applied to Part 91 Operations.** Part 117 requirements and limitations apply to all 14 CFR part 91 operations (other than part 91 subpart K (91K)) that are directed by a part 121 certificate holder if any segment is conducted as a part 121 passenger flight. Part 117 also applies to all flightcrew members who are participating in a part 91 operation (other than part 91K) on behalf of a part 121 certificate holder if any flight segment is conducted as a part 121 passenger flight.

**E. Part 91 Operations on Behalf of the Certificate Holder.** If a flightcrew member flies a part 121 passenger flight segment and a part 91 ferry flight segment without being provided an intervening rest period that satisfies part 117, § 117.25, those flight segments would be part of the same Flight Duty Period (FDP). Consequently, just like the part 121 passenger flights, the part 91 ferry flight segment would have to be conducted under the flight, duty, and rest limitations of part 117. However, if a flightcrew member is provided with the rest period specified in § 117.25 between the part 91 ferry flight segment and the part 121 passenger flight

segment, those flight segments would not be part of the same FDP. In that case, the part 91 ferry flight segment would not be subject to the flight, duty, and rest limitations of part 117. It is irrelevant whether the part 91 ferry flight segment takes place before or after the part 121 passenger flight segment; what matters is whether a rest period that satisfies § 117.25 was provided between the two flight segments.

**F. Cumulative Limitations Relative to Part 91 Operations.** The cumulative limitations prescribed in § 117.23 include all flying by flightcrew members on behalf of any certificate holder or 91K program manager. Thus, even if a part 91 flight is not operated pursuant to part 117, that flight still counts for purposes of the cumulative limitations of part 117 if it is flown on behalf of a certificate holder or 91K program manager. However, the part 117 cumulative limits can be exceeded while the flightcrew member is on a non-part 117 flight segment; that flightcrew member is simply prohibited from beginning the next part 117 flight segment if he or she cannot complete the part 117 segment within the pertinent cumulative limits.

**3-4693 DEFINITIONS.** In addition to the definitions in 14 CFR part 1, § 1.1 and 14 CFR part 110, § 110.2, the following definitions apply to part 117. In the event there is a conflict in definitions, the definitions in part 117 control.

**A. Acclimated.** Acclimated means a condition in which a flightcrew member has been in a theater for 72 hours or has been given at least 36 consecutive hours free from duty.

**B. Airport/Standby Reserve.** Airport/standby reserve means a defined duty period during which a flightcrew member is required by a certificate holder to be at an airport for a possible assignment.

**C. Augmented.** Augmented flightcrew means a flightcrew that has more than the minimum number of flightcrew members required by the airplane type certificate to operate the aircraft to allow a flightcrew member to be replaced by another qualified flightcrew member for in-flight rest.

**D. Calendar Day.** Calendar day means a 24-hour period from 0000 through 2359 using Coordinated Universal Time or local time.

**E. Certificate Holder.** Certificate holder means a person who holds or is required to hold an air carrier certificate or operating certificate issued under part 119 of this chapter.

**F. Deadhead Transportation.** Deadhead transportation means transportation of a flightcrew member as a passenger or non-operating flightcrew member by any mode of transportation, as required by a certificate holder, excluding transportation to or from a suitable accommodation. All time spent in deadhead transportation is duty and is not rest. For purposes of determining the maximum flight duty period in Table B of this part, deadhead transportation is not considered a flight segment.

**G. Duty.** Duty means any task that a flightcrew member performs, as required by the certificate holder including but not limited to flight duty period, flight duty, pre- and post-flight

duties, administrative work, training, deadhead transportation, aircraft positioning on the ground, aircraft loading, and aircraft servicing.

**H. Fatigue.** Fatigue means a physiological state of reduced mental or physical performance capability resulting from lack of sleep or increased physical activity that can reduce a flightcrew member's alertness and ability to safely operate an aircraft or perform safety-related duties.

**I. Fatigue Risk Management System (FRMS).** Fatigue Risk Management System (FRMS) means a management system for a certificate holder to use to mitigate the effects of fatigue in its particular operations. It is a data-driven process and a systematic method used to continuously monitor and manage safety risks associated with fatigue-related error.

**J. Fit for Duty.** Fit for duty means physiologically and mentally prepared, and capable of performing assigned duties at the highest degree of safety.

**K. Flight Duty Period (FDP).** Flight duty period (FDP) means a period that begins when a flightcrew member is required to report for duty with the intention of conducting a flight, a series of flights, or positioning or ferrying flights, and ends when the aircraft is parked after the last flight and there is no intention for further aircraft movement by the same flightcrew member. A flight duty period includes the duties performed by the flightcrew member on behalf of the certificate holder that occur before a flight segment or between flight segments without a required intervening rest period. Examples of tasks that are part of the flight duty period include deadhead transportation, training conducted in an aircraft or flight simulator, and airport/standby reserve, if the above tasks occur before a flight segment or between flight segments without an intervening required rest period.

**L. Flight Time.** Flight time means pilot time that commences when an aircraft moves under its own power for the purpose of flight and ends when the aircraft comes to rest after landing.

**M. Home Base.** Home base means the location designated by a certificate holder where a flightcrew member normally begins and ends his or her duty periods.

**N. Lineholder.** Lineholder means a flightcrew member who has an assigned flight duty period and is not acting as a reserve flightcrew member.

**O. Long-Call Reserve.** Long-call reserve means that, prior to beginning the rest period required by § 117.25, the flightcrew member is notified by the certificate holder to report for a flight duty period following the completion of the rest period.

**P. Physiological Night's Rest.** Physiological night's rest means 10 hours of rest that encompasses the hours of 0100 and 0700 at the flightcrew member's home base, unless the individual has acclimated to a different theater. If the flightcrew member has acclimated to a different theater, the rest must encompass the hours of 0100 and 0700 at the acclimated location.

**Q. Report Time.** Report time means the time that the certificate holder requires a flightcrew member to report for an assignment.

**R. Reserve Availability Period (RAP).** Reserve availability period (RAP) means a duty period during which a certificate holder requires a flightcrew member on short-call reserve to be available to receive an assignment for a flight duty period.

**S. Reserve Flightcrew Member.** Reserve flightcrew member means a flightcrew member who a certificate holder requires to be available to receive an assignment for duty.

**T. Rest Facility.** Rest facility means a bunk or seat accommodation installed in an aircraft that provides a flightcrew member with a sleep opportunity.

- Class 1 rest facility means a bunk or other surface that allows for a flat sleeping position and is located separate from both the flight deck and passenger cabin in an area that is temperature-controlled, allows the flightcrew member to control light, and provides isolation from noise and disturbance.
- Class 2 rest facility means a seat in an aircraft cabin that allows for a flat or near flat sleeping position, is separated from passengers by a minimum of a curtain to provide darkness and some sound mitigation, and is reasonably free from disturbance by passengers or flightcrew members.
- Class 3 rest facility means a seat in an aircraft cabin or flight deck that reclines at least 40 degrees and provides leg and foot support.

**U. Rest Period.** Rest period means a continuous period determined prospectively during which the flightcrew member is free from all restraint by the certificate holder, including freedom from present responsibility for work should the occasion arise.

**V. Scheduled.** Scheduled means to appoint, assign, or designate for a fixed time.

**W. Short-Call Reserve.** Short-call reserve means a period of time in which a flightcrew member is assigned to a reserve availability period.

**X. Split-Duty.** Split-duty means a flight duty period that has a scheduled break in duty that is less than a required rest period.

**Y. Suitable Accommodation.** Suitable accommodation means a temperature-controlled facility with sound mitigation and the ability to control light that provides a flightcrew member with the ability to sleep either in a bed, bunk, or in a chair that allows for flat or a near-flat sleeping position. Suitable accommodation only applies to ground facilities and does not apply to aircraft onboard rest facilities.

**Z. Theater.** Theater means a geographical area in which the distance between the flightcrew member's flight duty period departure point and arrival point differs by no more than 60 degrees longitude.

**AA. Unforeseen.** Unforeseen operational circumstance means an unplanned event of insufficient duration to allow for adjustments to schedules, including unforecast weather, equipment malfunction, or air traffic delay that is not reasonably expected.

**BB. Window of Circadian Low (WOCL).** Window of circadian low (WOCL) means a period of maximum sleepiness that occurs between 0200 and 0559 during a physiological night.

### **3-4694 FITNESS FOR DUTY (§ 117.5).**

#### **A. Minimum Rest Opportunity Prior to Starting an FDP or Reserve Period.**

Part 117 requires the flightcrew member to receive a minimum of a 10-hour rest period immediately before reporting for a FDP or reserve period. This rest period must provide the flightcrew member with 8 uninterrupted hours of sleep opportunity.

**B. Fitness for Duty: Flightcrew Member's Responsibility.** It is the responsibility of the flightcrew member to use their assigned sleep opportunity to gain the proper rest prior to reporting for an FDP. Part 117 requires each flightcrew member to be fit for duty when reporting for any FDP, well rested, and prepared to perform his or her duties, as assigned. This requirement rests solely with the flightcrew member.

**C. Fitness for Duty: Joint Responsibility.** Part 117 assigns joint responsibility between the flightcrew member and the certificate holder with regard to fitness for duty. Subsection 117.5(b) establishes this joint responsibility by prohibiting the certificate holder from assigning, and the flightcrew member from accepting, an assignment to a flight duty period if that flightcrew member has reported too fatigued to safely perform his or her assigned duties.

**D. Removing a Fatigued Flightcrew Member from Duty.** Section 117.5(c) states that the certificate holder may not permit a flightcrew member to continue an FDP if that flightcrew member has reported him or herself too fatigued to safely continue their assigned duties.

**E. Affirming Fitness for Duty.** Each flightcrew member must affirmatively state he or she is fit for duty prior to commencing a flight. This statement, affirming the flightcrew member's fitness for duty, is signified by that flightcrew member signing the flight's dispatch/release, as appropriate, attesting they are fit for duty. While a flightcrew member may have reported fit for duty at the beginning of their FDP, extenuating circumstances could have occurred during their FDP resulting in the flightcrew member becoming too fatigued to continue their assigned FDP. Part 117 contemplates this situation and, therefore, requires each flightcrew member to attest their fitness for duty at the beginning of each flight segment for which he or she is assigned.

**F. Demonstrating Compliance With § 117.5.** The certificate holder will be responsible for developing the following:

1) A statement in the certificate holder's operating manual stating that it is the responsibility of each flightcrew member to be fit for duty prior to reporting for any FDP.

2) A statement in the certificate holder's operating manual that the certificate holder may not assign, and that flightcrew member may not accept, an assignment for an FDP if that flightcrew member has reported him or herself too fatigued to perform or continue an assigned FDP.

3) A statement in the certificate holder's operating manual declaring that the certificate holder will not permit a flightcrew member to continue an FDP if that flightcrew member has reported him or herself too fatigued to continue an assigned FDP.

4) An acceptable method and applicable procedures for flightcrew members to, as part of the dispatch/flight release, affirmatively attest they are fit for duty for each flight segment they are assigned as operating flightcrew member. These procedures will be reflected in the certificate holder's operating manual.

**G. Additional References.** More information on fitness for duty may be found in the current edition of the following documents:

- AC 117-3, Fitness for Duty;
- Part 117 Preamble.

**3-4695 FATIGUE RISK MANAGEMENT SYSTEMS (FRMS) (§ 117.7).** Each part 121 certificate holder conducting operations under part 117 must comply with the applicable requirements and limitations of part 117, unless otherwise approved under an FRMS. The FRMS is an alternative method of compliance (AMOC) developed by the certificate holder and approved by the Federal Aviation Administration (FAA) with specific conditions and limitations applicable to the authorization that require certificate holder compliance when operating under that FRMS authorization.

**A. FRMS as an AMOC.** An FRMS is an optional approach to prescriptive regulations. A certificate holder seeking to exceed a limitation in part 117 or in part 121, subparts Q, R, or S, would do so under an FAA authorization. An FRMS is largely developed as an AMOC to prescriptive limitations based upon objective performance standards. A certificate holder may be authorized to apply an FRMS to any part or all of its operation, provided that the certificate holder demonstrates an effective AMOC that meets or exceeds the safety standards afforded by the prescriptive limitations. Unlike a Fatigue Risk Management Plan (FRMP) that is required for each certificate holder conducting operations under part 121, the FRMS is an AMOC to prescriptive limitations that the certificate holder may implement for fatigue management and mitigation.

**B. FRMS as a Management System.** An FRMS is a management system for a certificate holder to use to mitigate the effects of fatigue in its particular operations. An FRMS is a data-driven system, based largely upon scientific principles and operational knowledge that allows for continuous monitoring and management of safety risks associated with fatigue-related error. An FRMS is a fatigue mitigation tool that minimizes the acute and chronic sources of fatigue and manages the potential risks associated with fatigue. The FRMS is part of a repetitive performance improvement process that leads to continuous safety enhancements by identifying and addressing fatigue factors across time and changing physiological and operational circumstances. The objective of the FRMS is to manage, monitor, and mitigate the effects of fatigue to improve flightcrew member alertness and reduce performance errors.

**C. FRMS Applications.** FRMS applications are submitted to AFS-200 for review, processing, and approvals. Any FRMS applications received by the POI should be forwarded to AFS-200.

**D. Responsibility for FRMS Approvals and Authorizations.** FRMS approvals and authorizations are the responsibility of AFS-200.

**E. Operating Under the Provisions of an FRMS.** When operating under an FRMS authorization, the certificate holder must designate on the dispatch/release that the flight is operating under the specific FRMS authorization.

**F. Additional References.** More information on FRMS may be found in the current edition of AC 120-103, Fatigue Risk Management Systems for Aviation Safety

### **3-4696 FATIGUE EDUCATION AND AWARENESS TRAINING PROGRAMS**

(§ 117.9). Each part 121 certificate holder operating under part 117 must develop, implement, update, and maintain an FAA-approved Fatigue Education and Awareness Training Program, as prescribed in § 117.9. Fatigue training is an essential element to mitigating potential fatigue risks. The Fatigue Education and Awareness Training Program required under § 117.9 is an expansion of the FRMP training requirements outlined in Public Law (PL) 111-216, § 212(b)(2)(B). These training requirements are designed to provide annual education and awareness training to all employees of the certificate holder responsible for administering the provisions of part 117, including flightcrew members, dispatchers, individuals directly involved in the scheduling of flightcrew members, individuals directly involved in operational control, and any employee providing direct management oversight of those areas. The objective of the training program is to educate and improve the awareness of these employee groups in an effort to increase their understanding of the effects of fatigue relative to the safety of flight.

**A. Training Program Elements.** The fatigue-training requirements outlined in the certificate holder's FAA-accepted FRMP must be incorporated into its operator-specific FAA-approved ground training curriculum. The frequency of this training must be every 12 calendar-months, unless otherwise required by the certificate holder's operations specifications. At a minimum, the Fatigue Education and Awareness Training program must include the following:

- Review of FAA flight, duty, and rest regulatory requirements.
- Awareness of the FRMP program itself, including fatigue-related policies and procedures, and the responsibilities of management and employees to mitigate or manage the effects of fatigue and improve flightcrew member flight deck alertness.
- The basics of fatigue, including sleep fundamentals and circadian rhythms.
- The causes and awareness of fatigue.
- The effects of operating through multiple time zones.
- The effects of fatigue relative to pilot performance.
- Fatigue countermeasures, prevention, and mitigation.
- The influence of lifestyle, including nutrition, exercise, and family life on fatigue.
- Familiarity with sleep disorders.

- The effects of fatigue as a result of commuting.
- Pilot responsibility for ensuring adequate rest and fitness for duty.
- Operational procedures to follow when one identifies, or suspects, fatigue risk in oneself or others.
- Incorporate lessons learned regarding the effects of fatigue and mitigation initiatives relative to the certificate holder's operations.
- The certificate holder must use a methodology that continually assesses the effectiveness of their training program.

**B. Training Program Audience.** The training applies to all employees responsible for administering the provisions of the new rule, including flightcrew members, dispatchers, individuals directly involved in the scheduling of flightcrew members, individuals directly involved in operational control, and any employee providing direct management oversight of those areas.

**C. Training Program Updates.** Each part 121 certificate holder operating under part 117 must update their Fatigue Education and Awareness Training Program every 24 calendar-months. As noted in the preamble to part 117, the rule adopted the mandatory two-year update requirements of each part 121 certificate holders' education and training program (refer to PL 111–216, § 212(b)(4)(A) and (B)). The certificate holder's education and training program expires 24-calendars after approval. Thus, each certificate holder must update their education and training program every 24-calendar months. As noted in the preamble to part 117 and prescribed in § 117.9(c)(1)(2), the certificate holder should submit their update to the FAA for review 12 months prior to the expiration date of their training program.

**D. FAA-Approval of the Training Program.** The certificate holder's initial fatigue education and awareness training program and all non-minor changes to that program must receive FAA approval per § 117.9(a) prior to implementation. Minor changes to the training program only need to be accepted by the FAA and need not go through the approval process. For the purposes of clarity, a minor change includes correcting grammatical errors, typos, and non-substantive data. A change to any element of the training program would be considered a major change. A major change to the fatigue education and awareness training program would be considered a new program, and this change would have to be approved by the FAA before it is implemented.

**E. Demonstrating Compliance With § 117.9.** The certificate holder will be responsible for the following:

1) An initial fatigue education and awareness training program that is consistent with the training elements identified in OpSpec A317 and AC 117-2.

2) Placing the following statement in the training program that identifies the target audience: "The training applies to all employees responsible for administering the provisions of the new rule, including flightcrew members, dispatchers, individuals directly involved in the scheduling of flightcrew members, individuals directly involved in operational control, and any employee providing direct management oversight of those areas."

3) A statement in the certificate holder's training program requiring them to submit an update to their fatigue education and awareness training program every 24-calendar months from the date of initial approval of the fatigue education and awareness training program. As prescribed in § 117.9(c)(1)(2), updates should be submitted to the FAA at least 12 months prior to the 24-calendar month expiration date.

**F. Additional References.** More information on Fatigue Education and Awareness Training Programs may be found in the current editions of:

- AC 120-100, Basics of Aviation Fatigue;
- AC 117-2, Fatigue Education and Awareness Training Programs;
- Public Law 111-216, § 212(b), Fatigue Risk Management Plans; and
- Operations Specification (OpSpec) A317, Acceptance of a Fatigue Risk Management Plan.

### **3-4697 FLIGHT TIME LIMITATIONS (§ 117.11).**

**A. Background.** Studies have shown that after a person works for approximately eight or nine hours during a day, the risk of an accident increases exponentially for each additional hour worked. According to a series of studies that examined the national rate of accidents as a function of the amount of hours worked, the risk of an accident in the 12th hour of a work shift is more than double the risk of an accident in the 8th hour of a work shift. To mitigate the risk of fatigue setting in while on duty, the flight time limits in Table A of part 117 (unaugmented operations) restrict a flightcrew member's time on task (flight time) to either 8 or 9 hours during the unaugmented flightcrew member's FDP.

NOTE: Augmented flightcrew operations provide an added layer of safety by increasing the number of flightcrew members assigned to a flight or series of flights, above the required crew complement. This enables the flightcrew members to take an in-flight rest period, thus reducing fatigue and improving flightcrew member alertness. By using augmentation, the certificate holder gains additional flexibility as a result of longer FDPs and increased flight time limits. Augmentation adds a higher level of safety to compensate for the longer FDP and flight time limits.

**B. Flight Time Limitations.** Part 117 prescribes separate FTLs for unaugmented and augmented flightcrew member operations.

**1) Unaugmented Flightcrew Member Operations.** Unaugmented FTLs are prescribed in § 117.11(a)(1). The flightcrew member's applicable FTLs are predicated upon the "Time of Report," which is limited to eight or nine hours. If the flightcrew member's time of report occurs between 2000 hours and 0459 hours, the limit is eight hours during that FDP. If, however, the flightcrew member's time of report occurs between 0500 and 1959, then the FTL is nine hours for that FDP. (See Figure 3-161, Table A to Part 117-Maximum Flight Time Limits for Unaugmented Operations).

**2) Augmented Flightcrew Member Operations.** FTLs for augmented flightcrew member operations are prescribed in § 117.11(a)(2)(3).

a) Three pilots: a flightcrew consisting of three pilots is limited to 13 hours of flight time during that FDP.

b) Four pilots: a flightcrew consisting of four pilots is limited to 17 hours of flight time during that FDP.

**Figure 3-161. Table A to Part 117 - Maximum Flight Time Limits for Unaugmented Operations**

| <b>Table A to Part 117 – Maximum Flight Time Limits for Unaugmented Operations</b> |                                    |
|--|------------------------------------|
| <b>Time of report (acclimated)</b>   | <b>Maximum flight time (hours)</b> |
| 0000-0459  | 8                                  |
| 0500-1959  | 9                                  |
| 2000-2359  | 8                                  |

**C. Determining FTLs.** FTLs rest within the limits of the flightcrew member’s assigned FDP. An FDP is a period that begins when a flightcrew member is required to report for duty with the intention of conducting a flight or series of flights.

**1) Unaugmented Flightcrew Member.** The maximum FTL for an unaugmented flightcrew member may be found in Table A of part 117 (see Figure 3-161). The Time of Report is the actual time in which the flightcrew member reports for their FDP.

**2) Augmented Flightcrew Member.** The maximum FTL is determined based on the time in which the flightcrew member reports for duty. An augmented flightcrew member’s FTLs may be found in § 117.11(a)(2)(3).

**D. FTL Constraints.** As previously stated, a flightcrew member’s FTL must be within the limits of their maximum applicable FTL limit. A flightcrew member may not take off on a flight segment if he or she does not have a reasonable expectation that the flight segment will be completed within the maximum FTL limit.

**E. FTL Extensions.** If unforeseen operational circumstances arise after takeoff a flightcrew member may exceed the maximum flight time and the cumulative flight time limits (as prescribed in § 117.23(b)) to the extent necessary to safely land the aircraft at the next destination airport or alternate, as appropriate.

**F. Reporting Flight Time Extensions.** In the event a flightcrew member’s FTL is extended, the certificate holder must report that extension to the FAA within 10 days following the flight time extension. The report must include a description of the extended flight time limitation and the circumstances surrounding the need for the extension.

**G. Cumulative Flight Time Limits.** As prescribed in § 117.23(b)(1)(2), cumulative FTLs function using the following rolling windows: 672 consecutive hours (rolling 28-day period) or 365 consecutive calendar-day (a rolling 365-day period). A flightcrew member's cumulative FTLs shall not exceed:

- 1) 100 hours in any 672 consecutive hours, or
- 2) 1000 hours in any 365 consecutive calendar-day period.

**H. Demonstrating Compliance With § 117.11.** The certificate holder will be responsible for implementing and demonstrating the following:

- 1) A method for tracking unaugmented and augmented flightcrew member's flight times to ensure compliance with the applicable limits of § 117.11(a)(1)(2)(3).
- 2) A method for ensuring compliance with the cumulative FTL prescribed in § 117.23(b)(1)(2).
- 3) A method for reporting flight time extensions to the FAA as specified in § 117.11(b)(c)(d).
- 4) A statement in the certificate holder's operating manual that states flight time extensions may only be applied after takeoff, and only to the extent necessary to safely land at the next destination or alternate airport, as appropriate.
- 5) Procedures for identifying and implementing corrective actions as specified in § 117.11(c) and (d).

**3-4698 FLIGHT DUTY PERIOD.** An FDP is defined as a period that begins when a flightcrew member is required to report for duty with the intention of conducting a flight, a series of flights, or positioning or ferrying flights, and ends when the aircraft is parked after the last flight and there is no intention for further aircraft movement by the same flightcrew member. Additionally, an FDP includes the duties performed by the flightcrew member on behalf of the certificate holder that occur before a flight segment, or between flight segments, without a required intervening rest period. Examples of tasks that are part of the flight duty period include deadhead transportation, training conducted in an aircraft or flight simulator, and airport/standby reserve, if the above tasks occur before a flight segment or between flight segments without an intervening required rest period.

**A. Maximum FDP Limits.** One of the regulatory concepts of part 117 is the restriction on flightcrew members' maximum FDP limits. In creating maximum FDP limits, the rule addresses three primary fatigue concerns:

- 1) Flightcrew members' circadian rhythms needed to be addressed because studies have shown that flightcrew members who fly during their WOCL can experience severe performance degradation.

2) The amount of time spent at work needed to be taken into consideration because longer shifts increase fatigue.

3) The number of flight segments in a duty period needed to be taken into account because flying more segments requires more takeoffs and landings, which are both the most task-intensive and the most safety-critical stages of flight.

**B. Individual FDP Limits.** Under part 117, a flightcrew member is assigned an FDP limit based upon the scheduled time of start for that FDP. An FDP limit applies to the individual flightcrew member, not the crew as a whole. Therefore, within a crew, each flightcrew member could have a different maximum FDP limit. Flightcrew member's FDP limits incrementally decrease the later in the day in which the schedule time of start occurs for both unaugmented and augmented operations. In addition:

1) **Unaugmented Operations.** Unaugmented flightcrew member's maximum FDP limits will incrementally decrease as flight segments increase. These decrements mostly occur after the fourth segment, essentially representing a 30-minute decrement per segment. This decrease will continue to seven segments, where the limit remains consistent for each segment beyond seven segments. FDPs that have a Scheduled Time of Start between 0000-0359 have the shortest limit, which is nine hours, regardless of the number of segments flown.

2) **Augmented Operations.** An augmented flightcrew member's maximum FDP limit will decrease with the use of a lower-class rest facility (i.e., Class 3 instead of a Class 2) along with the number of pilots assigned to that FDP.

**C. FDP Scheduled Time of Start.** The Scheduled Time of Start for an FDP is created once that FDP has been assigned to a flightcrew member. In order to change this scheduled reporting time, the flightcrew member would have to be shifted into either long-call or short-call reserve assignment for that pertinent FDP.

**D. Flightcrew Member's Start Time-Acclimated or Unacclimated Status.** Knowing the acclimation status of a flightcrew member is essential in determining that flightcrew member's maximum FDP limit. Regardless of whether the flightcrew member is operating in an augmented or unaugmented operation, if the flightcrew member is unacclimated, that flightcrew member's maximum FDP limit must be reduced by 30 minutes. To determine the flightcrew member's maximum FDP limit, he/she must enter the appropriate time under the header titled "Scheduled Time of Start." The time of start assumes the flightcrew member is acclimated.

1) **Acclimated Flightcrew Member.** An acclimated flightcrew member may use local time when entering Tables B or C of part 117. The flightcrew member may also use base time if acclimated to a theater that encompasses his or her home base. This essentially becomes the acclimation point (e.g., JFK time) the flightcrew member will use for entering the appropriate table. Stated differently, the flightcrew member will enter the appropriate table using the local time of the point where they are acclimated, or they may use the local time of their base, if their base is within the theater to which they are acclimated. For example, a flightcrew member begins a series of FDPs in JFK, and is based in ORD, the flightcrew member could use either JFK or ORD time. The certificate holder will determine and declare whether local or base time will be

used; however, once determined and declared, the flightcrew member will use that time (local or base) when entering the tables until that flightcrew member receives 30 consecutive hours of rest (§ 117.25(b)) or acclimates to a new theater. If the flightcrew member's base is NOT in the theater to which the flightcrew member is acclimated, the flightcrew member must use the local time where the series of FDPs started. If, however, the flightcrew member acclimates to a new theater, which requires 36 consecutive hours rest or 72 hours in the new theater, the point to which the flightcrew member acclimates now becomes their new acclimation (or reference) point. The flightcrew member is now considered acclimated to that point and will enter the tables based on the local time of that point.

**2) Unacclimated Flightcrew Member.** If a flightcrew member is unacclimated, the flightcrew member will enter Table B or C of part 117 based on the local time where they were last acclimated. The flightcrew member will remain unacclimated until he/she re-enters the theater to which he/she is acclimated, or receives 36 consecutive hours of rest, or remains in the new theater for 72 hours, which acclimates the flightcrew member to a new theater.

**E. Determining FDP Limits.** A flightcrew member's maximum FDP limit is determined by the use of either Table B of part 117 for unaugmented operations (See Figure 3-162, Table B to Part 117 – Flight Duty Period: Unaugmented Operations) or Table C of part 117 for augmented operations (See Figure 3-163, Table C to Part 117 – Flight Duty Period: Augmented Operations):

**1) Unaugmented Operations.** Determine if the flightcrew member is acclimated or unacclimated. If the flightcrew member is acclimated, the time entered will be based on the local time where the series of FDPs (or single FDP) started, or the flightcrew member's base time. Base time may only be used if the flightcrew member's base is in the theater to which he/she is acclimated. If the flightcrew member is unacclimated, then the flightcrew member will use the time at the point where he/she was last acclimated (the use of base time is not applicable). Enter Table B (Figure 3-162) under the header titled "Schedule Time of Start." Identify the time started using the local or base time (as applicable) if acclimated, or the time at the point last acclimated for a flightcrew member that is unacclimated. Under the header titled "Number of Flight Segments," identify the number of segments to be flown (or actually flown). Extend vertically from that point until intersecting with the row that contains the time started. The point at which these data points intersect identifies the flightcrew member's maximum FDP limit. Increasing or decreasing the number of flight segments flown may result in a change to the flightcrew member's maximum FDP limit. However, for the purpose of determining the flightcrew member's maximum applicable FDP limit, a flight segment that results in a diversion is not counted to the limit. Additionally, a change in the "Scheduled Time of Start" range will impact the maximum FDP limit.

**2) Augmented Operations.** Determine if the flightcrew member is acclimated or unacclimated. If the flightcrew member is acclimated, the time entered will be based on the local time where the series of FDPs (or single FDP) started, or the flightcrew member's base time. Base time may only be used if the flightcrew member's base is in the theater to which he/she is acclimated. If the flightcrew member is unacclimated, then the flightcrew member will use the time at the point where he/she was last acclimated (the use of base time is not applicable.) Enter Table C (Figure 3-163) under the header titled "Schedule Time of Start." Identify the time started

using the local or base time (as applicable) if acclimated, or the time at the point last acclimated for a flightcrew member that is unacclimated. Under the header titled, “Maximum flight duty period based on rest facility and number of pilots,” identify the class of rest facility being used, and then the number of pilots assigned to that FDP. Extend vertically from that point until intersecting the row containing the time scheduled to start. The point at which these data points intersect identifies the flightcrew member’s maximum FDP limit. A change in the flightcrew member’s maximum FDP limit will result if the number of pilots assigned, the class of rest facility used is changed, or the “Scheduled Time of Start” is outside the range for that timeframe.

**3) Unacclimated Flightcrew Member.** For either unaugmented or augmented operations, if the flightcrew member is unacclimated, that flightcrew member’s maximum FDP limit, as determined in Table B or C, must be reduced by 30 minutes.

**Figure 3-162. Table B to Part 117 – Flight Duty Period: Unaugmented Operations**

| <b>Table B to Part 117 – Flight Duty Period: Unaugmented Operations</b> |  |          |          |          |          |          |           |
|---|--|----------|----------|----------|----------|----------|-----------|
| <b>Scheduled time of start (acclimated time)</b>                        | <b>Maximum flight duty period (hours) for lineholders based on number of flight segments</b> |          |          |          |          |          |           |
|   | <b>1</b>   | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> | <b>6</b> | <b>7+</b> |
| 0000-0359   | 9  | 9        | 9        | 9        | 9        | 9        | 9         |
| 0400-0459   | 10   | 10       | 10       | 10       | 9        | 9        | 9         |
| 0500-0559   | 12   | 12       | 12       | 12       | 11.5     | 11       | 10.5      |
| 0600-0659   | 13   | 13       | 12       | 12       | 11.5     | 11       | 10.5      |
| 0700-1159   | 14   | 14       | 13       | 13       | 12.5     | 12       | 11.5      |
| 1200-1259   | 13   | 13       | 13       | 13       | 12.5     | 12       | 11.5      |
| 1300-1659   | 12   | 12       | 12       | 12       | 11.5     | 11       | 10.5      |
| 1700-2159   | 12   | 12       | 11       | 11       | 10       | 9        | 9         |
| 2200-2259   | 11   | 11       | 10       | 10       | 9        | 9        | 9         |
| 2300-2359   | 10   | 10       | 10       | 9        | 9        | 9        | 9         |

**Figure 3-163. Table C to Part 117 – Flight Duty Period: Augmented Operations**

| <b>Table C to Part 117 – Flight Duty Period: Augmented Operations</b> |   |          |                              |          |                              |          |
|---|---|----------|------------------------------|----------|------------------------------|----------|
| <b>Scheduled time of start (acclimated time)</b>                      | <b>Maximum flight duty period (hours) based on rest facility and number of pilots</b> |          |                              |          |                              |          |
|   | <b>Class 1 rest facility</b>  |          | <b>Class 2 rest facility</b> |          | <b>Class 3 rest facility</b> |          |
|   | 3 pilots  | 4 pilots | 3 pilots                     | 4 pilots | 3 pilots                     | 4 pilots |
| 0000-0559   | 15  | 17       | 14                           | 15.5     | 13                           | 13.5     |
| 0600-0659   | 16  | 18.5     | 15                           | 16.5     | 14                           | 14.5     |
| 0700-1259   | 17  | 19       | 16.5                         | 18       | 15                           | 15.5     |
| 1300-1659   | 16  | 18.5     | 15                           | 16.5     | 14                           | 14.5     |
| 1700-2359   | 15  | 17       | 14                           | 15.5     | 13                           | 13.5     |

**F. Demonstrating Compliance With §§ 117.13 and 117.17.** The certificate holder will be responsible for developing, implementing, and demonstrating the following:

- 1) A method for determining a flightcrew member's maximum FDP limits for each flightcrew member assigned to a flight.
- 2) Inserting a copy of Tables A, B, and C of part 117 into their operating manual.
- 3) A process for determining when a flightcrew member is acclimated and at what point he/she becomes unacclimated. This process should include a process for adjusting the flightcrew member's maximum FDP limit.
- 4) Policies and procedures for declaring whether the certificate holder will use local or base time. The policies and procedures should include methods for notifying the flightcrew member of this declaration.
- 5) Policies and procedures for changing a flightcrew member's assignment when the actual time of start of an FDP differs from the scheduled time of start, as assigned to the flightcrew member.

**3-4699 FLIGHT DUTY PERIOD EXTENSIONS (§ 117.19).** Part 117 allows for the extension of a flightcrew member's maximum FDP limit under specific conditions and limitations. Section 117.19 provides for two conditions under which a flightcrew member's FDP may be extended:

- A post takeoff FDP extension, and
- A pretakeoff FDP extension.

**A. Post takeoff FDP Extension.** The post takeoff FDP extension applies to an FDP in which a situation arises after takeoff that would cause a flightcrew member to exceed the pertinent FDP limit. This type of extension is more generous than a pretakeoff FDP extension because once an airplane is in the air, the certificate holder and pilot in command (PIC) have

very little discretion concerning FDPs and flight time limits, as they cannot change the flightcrew while the plane is in the air.

**B. Pretakeoff FDP Extension.** For situations that are known before takeoff that would cause a flightcrew member to exceed the pertinent FDP limit, only the more stringent pretakeoff FDP extensions can be utilized. That is because the certificate holder and PIC have more options for dealing with unexpected situations that arise while the plane is still on the ground. Thus, the distinction between pre- and post-takeoff FDP extensions comes from determining whether the flightcrew member and certificate holder had a reasonable expectation before takeoff that the flight segment would be completed within the pertinent FDP limit.

**C. Construct of an FDP.** Tables B and C of part 117 prescribe the maximum FDP limits. A 30-minute period exists at the end of each FDP, which may not be used for scheduling a flightcrew member. The purpose for this 30-minute period is simply a buffer that may be used in the event the flightcrew member's actual FDP runs over the maximum FDP limit by 30 minutes or less.

**D. Applying a Pretakeoff FDP Extension.** If unforeseen operational circumstances arise prior to takeoff, a flightcrew member's maximum FDP limit may be extended up to a maximum of 2 hours beyond their maximum FDP limit. Once a flightcrew member's maximum FDP limit has been extended by more than 30 minutes, that flightcrew member must receive a 30 consecutive hour rest period (as described in § 117.25(b)) before that flightcrew member may accept another FDP extension exceeding 30 minutes. The following conditions and limitations apply to pretakeoff FDP extensions:

- 1) An FDP extension requires joint concurrence between the certificate holder and the PIC.
- 2) An FDP extension may be applied to either Table B (unaugmented) or Table C (augmented) FDP limits.
- 3) The maximum length of an FDP extension is 2 hours. However, a flightcrew member may accept an FDP extension that is more than 30 minutes but less than the maximum 2-hour limit.
- 4) A pretakeoff FDP extension cannot be utilized if it causes a flightcrew member to exceed the cumulative FDP limits specified in § 117.23(c).
- 5) A flightcrew member cannot accept another FDP extension exceeding 30 minutes until that flightcrew member has received a 30 consecutive hour rest period, as prescribed in § 117.25(b).

**E. Reporting Pretakeoff FDP Extensions.** Each certificate holder must, within 10 days, report to the FAA any FDP that exceeded the maximum FDP permitted in Tables B or C by more than 30 minutes. The report must contain the following:

- 1) A description of the extended FDP and the circumstances surrounding the need for the extension;

2) If the circumstances giving rise to the extension were within the certificate holder's control, the corrective action(s) that the certificate holder intends to take to minimize the need for future extensions; and

3) The certificate holder must implement the corrective action(s) identified in this report within 30 days from the date of the extended FDP.

**F. Applying a Post takeoff FDP Extension.** If unforeseen operational circumstances arise after takeoff, the PIC and the certificate holder may extend a flightcrew member's maximum FDP limits specified in Tables B or C of part 117 to the extent necessary to safely land the aircraft at the next destination airport or alternate airport, as appropriate. The following conditions and limitations apply to post takeoff FDP extensions:

1) FDP extension may be applied to either Table B (unaugmented) or Table C (augmented) FDP limits.

2) An extension of a flightcrew member's maximum FDP limit by more than 30 minutes may occur only once prior to receiving a 30 consecutive hour rest period described in § 117.25(b).

3) A post takeoff FDP extension may exceed the cumulative FDP limits specified in § 117.23(c).

4) The certificate holder must report to the FAA within 10 days any FDP that exceeded the maximum FDP limits permitted by Tables B or C of part 117.

5) The report must contain a description of the circumstances surrounding the affected FDP.

**G. Operational and Regulatory Considerations.** FDP limits are applicable to a single flightcrew member, not the crew. Under § 117.19(a)(2) and (b)(2), an FDP extension of a flightcrew member's maximum FDP limit that is greater than 30 minutes can only be taken once before that flightcrew member is provided with 30 consecutive hours of rest, as prescribed in § 117.25(b). Therefore, if a flightcrew member had their maximum FDP limit extended beyond the 30 minutes, that flightcrew member could not take another FDP extension until receiving the 30 consecutive hour rest period reset. Thus, that flightcrew member and the certificate holder would be in violation of part 117 if that flightcrew member exceeds the pertinent FDP limits by more than 30 minutes. It is irrelevant that the FDP limit exceedance would have been caused by unforeseen operational circumstances. To that end, once a flightcrew member uses an FDP extension, the FAA strongly recommends that the certificate holder add buffers to that crewmember's schedule to account for possible unexpected events, reassign that flightcrew member, or provide that crewmember with a 30-hour rest period as soon as possible in order to reset the flightcrew member for an FDP extension.

**H. Evidence of FDP Extension Concurrence.** A record of PIC concurrence can take any reasonable form as long as there is evidence that the PIC concurred with the extension. For example, the PIC could note his/her concurrence with an FDP extension on a dispatch/flight release or in an ACARS message.

**I. FDP Extensions Less Than 2 Hours.** If the PIC believes that the flightcrew is too fatigued for a two-hour FDP extension, the PIC could concur to a shorter FDP extension that he/she believes could safely be carried out by the flightcrew. Additionally, pursuant to § 117.5, each flightcrew member would also have to certify that he/she would not be too fatigued to operate the aircraft during the extension.

**J. FDP Extensions That Exceed Cumulative Limits.** Under § 117.19(b)(3), a post takeoff FDP extension allows a flightcrew member to exceed the cumulative FDP limits. However, a post takeoff FDP extension is limited in that it expires once the airplane lands. Once the flight on which the post takeoff extension was used has been completed, the flightcrew member would again be bound by the cumulative FDP limitations. Thus, the post takeoff FDP extension allows a flightcrew member to exceed the cumulative FDP limits only to the extent necessary to complete the flight on which the extension is utilized.

**K. Submitting FDP Extension Reports.** The certificate holder will submit all FDP extension reports, circumstances for the extension, and corrective actions, as necessary, to the principal operations inspector.

**L. Demonstrating Compliance With § 117.19.** The certificate holder will be responsible for developing, implementing and demonstrating the following:

- 1) Procedures for the certificate holder and the PIC to follow when extending an FDP.
- 2) Outline the limits of the FDP extension, as specified in § 117.19.
- 3) Method for archiving PIC concurrences after accepting an FDP extension.
- 4) Procedures for ensuring the flightcrew member receives a 30 consecutive hour rest period, as specified in § 117.25(b), prior to accepting another FDP extension.
- 5) Statement in the certificate holder's operating manual that when a pretakeoff extension of an FDP is applied, the FDP cumulative limitations specified in § 117.23(c) may not be exceeded.
- 6) Detailed procedures for reporting FDP procedures, determining the root-cause, and developing and implementing the necessary corrective actions.
- 7) Policy statement that post takeoff extensions may only be used to the extent necessary to safely land the aircraft at the next destination or alternate airport, as appropriate.

**3-4700 REST FACILITIES.** Rest is the best form of fatigue mitigation based upon the quality of rest received. Onboard flightcrew member rest facilities are designed to provide one of three qualities of rest: good, fair, or poor. Part 117 defines and classifies onboard flightcrew member rest facility criteria. As defined in part 117, a rest facility means bunk or seat accommodation installed in an aircraft that provides a flightcrew member with a sleep opportunity.

**A. Classification of Rest Facilities.** Rest facilities are classified into three categories: Class 1, Class 2 or Class 3. An essential factor in determining an augmented flightcrew member's maximum FDP limit is the classification of rest facility being used. A Class 1 rest facility provides the best quality of rest, therefore provides a longer FDP limit than a Class 3 rest facility, which provides the least quality of the three classes. For this reason a rest facility must be qualified as meeting one of the following criteria:

1) Class 1 rest facility means a bunk or other surface that allows for a flat sleeping position and is located separate from both the flight deck and passenger cabin in an area that is temperature controlled, allows the flightcrew member to control light, and provides isolation from noise and disturbance.

2) Class 2 rest facility means a seat in an aircraft cabin that allows for a flat or near flat sleeping position; is separated from passengers by a minimum of a curtain to provide darkness and some sound mitigation; and is reasonably free from disturbance by passengers or flightcrew members.

3) Class 3 rest facility means a seat in an aircraft cabin or flight deck that reclines at least 40 degrees and provides leg and foot support.

**B. Operations Specifications (OpSpec) A117.** When a certificate holder conducts augmented flightcrew operations, the certificate holder must have OpSpec A117 issued identifying the aircraft and classification of rest facility used in augmented flightcrew operations. OpSpec A117 identifies aircraft with onboard rest facilities by the registration and serial number, make, model, and series (M/M/S), the classification of rest facility and the number of sleep surfaces installed under that classification. OpSpec A117 provides the certificate holder, flightcrew member and inspector with the necessary information to determine the applicable FDP limits for an augmented flightcrew member.

**C. Significance of Rest Facility Classification.** Each rest facility has a classification ranking from one through three that defines the maximum flight duty period (FDP) limits predicated on the flightcrew member's start time, the number of pilots and the classification of rest facility to be used for augmented flightcrew operations. A Class 1 facility provides for the longest FDP, a Class 2 provides for the second longest FDP, and a Class 3 provides for the third longest FDP.

**D. Specific Guidance for Qualifying Rest Facilities.** The current edition of AC 117-1, Flightcrew Member Rest Facilities, provides guidance on qualifying rest facilities and the issuance of OpSpec A117.

**E. Additional References.** More information on rest facilities may be found in:

- AC 117-1, Flightcrew Member Rest Facilities
- TNO Report

### 3-4701 AUGMENTATION.

**A. Use of Augmentation.** Augmentation enables the certificate holder to use longer FDP limits by: (1) using rest facilities; and (2) increasing the number of flightcrew members assigned to a flight, above the minimum required flightcrew member complement. As a result, each flightcrew member is able to receive in-flight rest and the workload is shared among 3 or 4 flightcrew members, as opposed to 2 flightcrew members, thereby, reducing the effects of fatigue. Augmented flightcrew member operations also enable higher flight time limits based upon either a 3- or 4-pilot operation. When augmented flightcrew member operations are used, the aircraft assigned to that flight must have an installed rest facility that meets the criteria of a Class 1, 2, or 3 rest facility, and that aircraft information must be reflected in OpSpec A117.

**1) When is Augmentation Required?** Augmentation is required whenever a pilot is scheduled to fly in excess of the flight time limits prescribed in Table A of part 117, when three or more pilots are assigned to the flight, or when the flightcrew member FDP limit is based on the limits of Table C of part 117. When augmentation is applied, the airplane must have an installed rest facility that is qualified as meeting one of the three classifications defined in § 117.3.

**2) Augmented FDP Limits.** Table C of part 117 prescribes the maximum FDP limits for a flightcrew member based upon the scheduled time of start of the FDP, the class of rest facility used and the number of flightcrew members assigned to that flight or series of flights (see Figure 3-163).

**3) Augmented Flightcrew Member Flight Time Limits.** Flight time limits for augmented flightcrew member FDPs consisting of 3 or 4 pilots are prescribed in § 117.11(a)(2)(3), which are 13 hours for 3 pilots and 17 hours for 4 pilots.

**4) Constrained FDPs.** FDP limits are reduced consistently based upon the schedule time of start of the FDP, the number of pilots assigned to the flight (or series of flights), and the class of rest facility used. While the maximum flight time limit for 4 pilots is 17 hours, the FDP limits for 4 pilots using a Class 3 rest facility constrains the maximum flight time limit to a lower limit. With exception of an FDP start time between 0700 and 1259, the FDP limits using a Class 2 rest facility also constrain the flight time limits for 4 pilots below the maximum flight time limit.

**5) Benefits of Augmentation.** The main benefit for augmentation is fatigue mitigation. However, due to operational necessity, if the certificate holder required a higher FDP or flight time limit for a flight or series of flights above the unaugmented limits, the use of augmentation may achieve the certificate holder's needs. If augmentation were used, the maximum applicable augmented FDP limits based upon the FDP start time, number of pilots assigned, and rest facility used would apply, along with the applicable flight time limit for either a 3- or 4-pilot assignment, keeping in mind the FDP limit may constrain the maximum flight time limit.

**6) Limits on Augmentation.** A flightcrew member is limited to a maximum of three segments while conducting an augmented FDP.

**7) Limitations on a Diversion.** A flight segment contains a takeoff and landing. If a takeoff results in a diversion, that flight segment (segment containing the diversion) will not be treated as a segment for the purpose of calculating the maximum 3-segment limitation for augmented FDP. While a diversion may not count as a flight segment, the time spent on diversion would still count for purposes of the FDP and flight time limits. This is because the flight-time limit applies to all time that is spent piloting an aircraft and the FDP limit applies to all time between when a pilot first reports for duty with the intention of flying a plane and when the pilot completes his/her final flight segment. Likewise, when determining the flightcrew member's maximum applicable FDP limit for unaugmented operations, a flight segment that results in a diversion is not considered part of the total segments during that FDP.

**B. Conditions and Limitations on the Landing and Monitoring Flightcrew Members.** The following conditions and limitations apply to the landing and monitoring flightcrew members operating on an augmented FDP:

- 1) Two consecutive-hours in the second half of the flight duty period are available for in-flight rest for the pilot flying the aircraft during landing.
- 2) Ninety consecutive-minutes are available for in-flight rest for the pilot performing monitoring duties during landing.

**C. Cumulative Flight Duty Period Limits.** Cumulative flight duty period hours are limited to any 168 consecutive-hours (seven consecutive-day-period) or any 672 consecutive-hours (four consecutive-week-period). No certificate holder may schedule and no flightcrew member may accept an assignment if the flightcrew member's total FDP hours will exceed:

- 60 FDP-hours in any 168 consecutive-hours, or
- 190 FDP-hours in any 672 consecutive-hours.

**3-4702 FLIGHT DUTY PERIOD: SPLIT-DUTY (§ 117.15).** The FAA defines the term "split-duty" as a FDP having a scheduled break in duty that is less than a required rest period. However, the scheduled break in duty does not provide the flightcrew member with a minimum of 10 consecutive-hours of rest required prior to beginning an FDP or reserve period. Split-duty is an effective fatigue mitigation that is based on the premise that there are times during an unaugmented nighttime FDP when a certificate holder could reasonably provide a flightcrew member with an opportunity for rest. This rest opportunity (opportunity to sleep) would allow a flightcrew member to get some sleep during the night. The nighttime sleep could be used to mitigate the performance degradation created by working through the WOCL.

**A. Minimum Split-Duty Rest.** Split-duty rest breaks provide carriers conducting nighttime operations with additional flexibility. Split-duty rest must be at least 3 hours long and must be scheduled in advance. The actual split-duty rest breaks may not be shorter than the scheduled split-duty rest breaks. The rationale for this is that flightcrew members must, at the beginning of their FDP, evaluate their ability to safely complete their entire assigned FDP. In order to do so, they must not only know the length of the FDP, but any scheduled split-duty rest breaks that they will receive during their FDP.

**B. Unaugmented Operations Only.** Split-duty may only be applied to an unaugmented flightcrew member; therefore, an augmented flightcrew may not receive any split-duty rest credit under the provisions prescribed in § 117.15.

**C. Suitable Accommodation.** The split-duty rest must occur in a suitable accommodation during his or her FDP. The time that the flightcrew member spends in the suitable accommodation is not considered part of that flightcrew member's FDP if all of the following conditions are met:

- 1) The rest opportunity is provided between the hours of 2200 and 0500 local time.
- 2) The time spent in the suitable accommodation is at least 3 hours, measured from the time that the flightcrew member reaches the suitable accommodation.
- 3) The rest opportunity is scheduled before the beginning of the flightcrew member's FDP in which that rest opportunity is taken.
- 4) The rest opportunity that the flightcrew member is actually provided may not be less than the rest opportunity that was scheduled.
- 5) The split-duty rest opportunity may not be provided until the flightcrew member's first segment of that FDP has been completed.
- 6) The combined time of the FDP and the split-duty rest opportunity may not exceed 14 hours.

NOTE: If the combined split-duty rest opportunity and FDP time of a flightcrew member exceeds 14 hours, then the amount of split-duty rest that caused the exceedance would not count as split-duty. Instead, this time would simply count as part of the flightcrew member's FDP, and it would be subject to the FDP extensions specified in § 117.19.

**D. Scheduled vs. Actual Split-Duty Rest Break.** Subsection 117.15(d) states that the actual split-duty rest opportunity may not be less than the scheduled split-duty rest opportunity. However, § 117.15 does not prohibit actual split-duty rest from exceeding the scheduled split-duty rest. If the actual split-duty rest period exceeds the scheduled rest period, then the actual rest provided to the flightcrew member would be considered split-duty as long as that rest period is within the 14-hour limit specified in § 117.15(f).

**E. Application of Local Time for Split-Duty Rest.** Subsection 117.15(a) states that the split-duty rest opportunity must be "provided between the hours of 2200 and 0500 local time." Thus, in order to determine compliance with § 117.15(a), the certificate holder must use local time at the location where the split-duty rest is being provided regardless of whether the flightcrew member is acclimated to the theater that encompasses that location.

**3-4703 RESERVE STATUS (§ 117.21).**

**A. Reserve Flightcrew Member.** A reserve flightcrew member is a flightcrew member who a certificate holder requires to be available to receive an assignment for duty.

**B. Reserve Status.** A flightcrew member assigned to a reserve period is considered to be in one of the following three reserve classifications (Status):

- 1) Airport/standby,
- 2) Short-call, or
- 3) Long-call.

**C. Reserve Limitations.** Unless the certificate holder specifically designates a flightcrew member assigned to a reserve period as being airport/standby or short-call reserve, then that flightcrew member is considered to be on long-call reserve; and must comply with the provisions prescribed for this classification of reserve.

**D. Airport/Standby Reserve.** Any reserve that meets the definition of airport/standby reserve must be designated as airport/standby reserve. The definition of airport/standby reserve may be found in § 117.3. For airport/standby reserve, all time that is spent on airport/standby reserve is part of a flightcrew member's FDP regardless of what happens during the airport/standby reserve. Therefore, the flightcrew member must be assigned in accordance with the applicable FDP limitations prescribed in Tables B or C (as applicable) of part 117.

**E. Cumulative Limitations.** Since all time spent in an airport/standby reserve status is part of the flightcrew member's FDP time, that time spent on Airport/standby is subject to the cumulative FDP limitations specified in § 117.21(b).

**F. Physical Location of an Airport/Standby Assignment.** Section 117.3 defines airport/standby reserve as a duty period during which a flightcrew member is required by a certificate holder to be at an airport for a possible assignment. In order to be at an airport, a flightcrew member would have to be physically located on airport property.

**G. Short-Call Reserve.** A flightcrew member assigned to short-call will have a reserve availability period (RAP) identifying the timeframe in which that flightcrew member must be available to the certificate holder. The flightcrew member's RAP may not exceed 14 hours.

**H. Short-Call Rest Limitations.** Once a flightcrew member completes a RAP, the flightcrew member must receive the required rest specified in § 117.25(e) prior to the certificate holder scheduling, and the flightcrew member accepting, an assignment for another RAP.

**I. FDP and RAP Limitations for Unaugmented Operations.** The total number of hours a flightcrew member may spend in an FDP and a RAP may not exceed the lesser of the maximum applicable FDP limit in Table B of part 117 plus 4 hours, or 16 hours, as measured from the beginning of the RAP. Essentially, the combined number of hours spent in a RAP and FDP may not exceed the lesser of: pertinent FDP limit in Table B plus four hours or 16 hours.

**J. FDP Limits and the Addition/Subtraction of Flight Segments for Unaugmented Operations.** The number of flight segments in an FDP can be changed after an FDP begins. However, as flight segments are added to a flightcrew member's FDP, the potential outcome may be a decreased FDP limit. Conversely, if the number of flight segments in an FDP is reduced, the FDP limit may be slightly increased up to the maximum limit. For the purposes of determining maximum applicable FDP limits, in the event a flight segment results in a diversion, the diversion segment does not count as a segment.

**K. FDP and RAP Limitations for Augmented Operations.** The total number of hours a flightcrew member may spend in an FDP and a RAP may not exceed the maximum applicable FDP limit in Table C of part 117 plus 4 hours, as measured from the beginning of the RAP. The combined number of hours spent in a RAP and an FDP may not exceed the pertinent FDP limit in Table C plus 4 hours.

**L. FDP and RAP Limitations Apply to the Individual Flightcrew Member.** The RAP and RAP + FDP limits, as well as the other limits in § 117.21, apply to each flightcrew member individually.

**M. Example for Applying FDP and RAP Limits (Unaugmented Operations).** An acclimated flightcrew member begins a RAP at 0600. That flightcrew member is then assigned to an unaugmented FDP that begins at 1200 and consists of two flight segments. According to Table B, the FDP limit for a two-segment FDP that begins at 1200 is 13 hours. The applicable 13-hour FDP limit plus 4 hours equals 17 hours. Because this is greater than 16 hours, under § 117.21(c)(3), the pertinent RAP + FDP limit for this unaugmented operation is 16 hours. Given that the flightcrew member in this example began his RAP at 0600, he will have 6 hours of RAP time by the time his FDP will start at 1200. As a result, to stay within the 16-hour RAP + FDP limit, this flightcrew member's FDP cannot exceed 10 hours without an extension, as his RAP will use up 6 hours of the 16-hour RAP + FDP limit. For the second example, an acclimated flightcrew member begins a RAP at 1100. That flightcrew member is then assigned to an unaugmented FDP consisting of five flight segments that begin at 1500. According to Table B, the FDP limit for a five-segment FDP that begins at 1500 is 11.5 hours. The applicable 11.5-hour FDP limit plus 4 hours equals 15.5 hours. Because this is smaller than 16 hours, under § 117.21(c)(3), the pertinent FDP + RAP limit for this unaugmented operation is 15.5 hours. Since the flightcrew member in this example began his RAP at 1100, he will have 4 hours of RAP time by the time his FDP will start at 1500. Consequently, this flightcrew member can take the full 11.5-hour FDP as the 11.5-hour FDP plus the 4 hours of RAP will not exceed the 15.5-hour RAP + FDP limit.

**N. Entering the FDP Table While on a RAP.** The pertinent FDP limit for the RAP + FDP regulations in § 117.21 is determined using the time at which the FDP begins.

**O. Reserve and Cumulative Limitations.** Short-call reserve consists of a RAP and an FDP, if the FDP is assigned during the reserve. The RAP is not part of an FDP, and as such, the time spent on an FDP is the only aspect of short-call reserve that is counted toward the cumulative FDP limits. However, this situation would change if the pilot was to be assigned to airport/standby reserve instead of short-call reserve. Under § 117.21(b), the entire time that is spent in airport/standby reserve is considered to be FDP.

**P. Long-Call Reserve Rest Requirements.** A flightcrew member assigned to long-call reserve must receive the rest specified in § 117.25(e). However, if a certificate holder contacts a flightcrew member to assign him or her to an FDP that will begin before and operate into the flightcrew member's WOCL, the flightcrew member must receive a 12-hour notice of report time from the certificate holder.

**Q. Shifting a Flightcrew Member from Long-Call to Short-Call Reserve.** A certificate holder may shift a reserve flightcrew member's reserve status from long-call to short-call only if the flightcrew member receives a rest period as provided in § 117.25(e).

**3-4704 REST PERIODS (§ 117.25).** A certificate holder may not assign, nor may a flightcrew member accept, an assignment to any reserve or duty with that certificate holder during any required rest period. A rest period must be prospective in nature, which means that a flightcrew member must be told in advance that he or she will be on a rest period for a specified duration. This is so that a flightcrew member has an opportunity to plan out his or her rest period in order to maximize the sleep opportunities available during that rest period.

**A. Minimum 10-Hour Rest Period.** Part 117 prescribes the minimum rest period between FDPs as 10 consecutive hours measured from the time the flightcrew member is released from duty. This 10-hour rest period must provide the flightcrew member with a minimum 8 uninterrupted hours of sleep opportunity. Subsection 117.25(e) requires the 10 hours of rest period (that includes an 8-hour uninterrupted sleep opportunity) to occur immediately before the flightcrew member begins a reserve period or FDP. This is to ensure the flightcrew member is properly rested prior to accepting an assignment for reserve or an FDP. If, however, the flightcrew member determines that their 10-hour rest period will not provide 8 uninterrupted hours of sleep opportunity, the flightcrew member must notify the certificate holder. The flightcrew member cannot report for the assigned reserve period or FDP until that flightcrew member receives an 8-hour sleep opportunity.

**B. Thirty-Hour Cumulative Rest Period.** In an effort to mitigate cumulative fatigue, a flightcrew member must receive a 30 consecutive hour rest period within the previous 168 consecutive hours. Therefore, before beginning any reserve or FDP, a flightcrew member must be given at least 30 consecutive hours free from all duty in any 168 consecutive hours. The point of reference for the 168-hour rest period specified in § 117.25(b) is the beginning of an FDP. In this case § 117.25(b) requires that a flightcrew member be provided with a 30 consecutive hour rest period in the 168-hour period immediately preceding an FDP. In the event a flightcrew member has received 36 consecutive hours of rest to re-acclimate to a new theater, the flightcrew member is considered to have met the 30 consecutive hour cumulative rest requirement. Again, the flightcrew member's assigned rest period must be prospective in nature. Because a flightcrew member would need to plan ahead in order to maximize the multiple sleep opportunities available during this 30-hour rest period, the flightcrew member must be told before the rest period begins that he/she will be receiving 30 hours of rest in order for that rest to satisfy § 117.25(b).

**C. Acclimation.** A flightcrew member operating in a new theater that has received 36 consecutive hours of rest, or who has been in a new theater for 72 hours, is considered to be acclimated to that new theater.

**D. Rest Requirements After Being Out of Theater and Away From Home Base for More Than 168 Hours.** If a flightcrew member travels more than 60° longitude during an FDP, or a series of FDPs, that require him or her to be away from home base for more than 168 consecutive hours, the flightcrew member must be given a minimum of 56 consecutive hours rest upon return to home base. This required rest must encompass three physiological nights' rest based on local time.

**E. Rest Requirements for Deadhead Transportation.** If a flightcrew member engaged in deadhead transportation exceeds the applicable FDP in Table B of part 117, the flightcrew member must be given a rest period equal to the length of the deadhead transportation but not less than 10 consecutive hours immediately before beginning an FDP measured from the time the flightcrew member is released from duty. For the purpose of clarity, in accordance with the definition of FDP in § 117.3, deadhead transportation that is followed by a flight segment without an intervening rest period is part of an FDP and is subject to the FDP limits in Tables B and C. All other deadhead transportation is not part of an FDP and is not subject to any limits under part 117. However, if the deadhead transportation exceeds the limits of Table B, § 117.25(g) requires that the flightcrew member engaging in the deadhead transportation be provided with a compensatory rest period before beginning his/her next FDP.

**3-4705 CONSECUTIVE NIGHTTIME OPERATIONS (§ 117.27).** The provisions prescribed in § 117.27 for consecutive nighttime operations apply whenever a flightcrew member's FDP infringes on any part of that flightcrew member's WOCL. If, however, a flightcrew member's FDP remains entirely free of their WOCL, the provisions of § 117.27 would not be applicable. When a flightcrew member conducts operations during their WOCL, the risk of cumulative fatigue significantly increases. For this reason § 117.27 prescribes specific limitations and conditions when consecutive nighttime operations apply, regardless of whether the FDP is unaugmented or augmented.

**A. Limitations for Consecutive Nighttime Operations.** Flightcrew members are limited to a maximum of 3 consecutive nighttime FDPs without any additional mitigation. However, a flightcrew member may be assigned a maximum of 5 consecutive nighttime FDPs provided the certificate holder provides that flightcrew member with a minimum 2-hour mid-duty rest opportunity during each of the 5 consecutive nighttime FDPs. This rest period must be taken in a suitable accommodation (as defined in § 117.3), and the minimum 2-hour mid-duty rest opportunity is measured from the time that flightcrew member reaches the suitable accommodation.

**B. Infringement on the Flightcrew Member's WOCL.** As a point of reference, in a series of consecutive FDPs, the flightcrew member's first FDP that infringes on their WOCL is subject to the limitations prescribed in consecutive nighttime operations. A flightcrew member may not exceed three consecutive nighttime operations without specific mitigations prescribed in § 117.27. This simply means that a flightcrew member may not be scheduled, or accept an assignment, for more than three consecutive nighttime FDPs where each of the three FDPs infringe on any part of that flightcrew member's WOCL.

**C. Limitations on Five Consecutive Nighttime FDPs.** A certificate holder may schedule, and a flightcrew member may accept, up to five consecutive FDPs if that certificate

holder provides that flightcrew member with an opportunity to rest in a suitable accommodation during each of the consecutive nighttime FDPs. The criteria for the suitable accommodation must meet the definition outlined in § 117.3. Principally, a flightcrew member may be scheduled and may accept up to 5 consecutive nighttime operations provided the certificate holder provides that flightcrew member with a minimum of a 2-hour rest opportunity during each of the consecutive nighttime FDPs. When a flightcrew member is scheduled 4 or 5 consecutive nighttime FDPs, that flightcrew member must be provided at least a 2-hour rest opportunity during each of the 4 or 5 FDPs, as applicable. Otherwise, that flightcrew member is limited to three consecutive nighttime FDPs.

**D. Two-Hour Rest Opportunity Conditions and Limitations.** The minimum 2-hour rest opportunity is measured from the time that flightcrew member reaches the suitable accommodation. The following limitations and conditions shall apply to each 2-hour mid-duty rest opportunity:

- 1) The rest opportunity is provided between the hours of 2200 and 0500 local time.
- 2) The rest opportunity is scheduled before the beginning of the FDP in which that rest opportunity is taken.
- 3) The rest opportunity that the flightcrew member is actually provided may not be less than the rest opportunity that was scheduled.
- 4) The rest opportunity is not provided until the first flight segment of the FDP has been completed.

**3-4706 EMERGENCY AND GOVERNMENT-SPONSORED OPERATIONS (§ 117.29).**

Flights operated by a certificate holder under contract with a U.S. Government agency must comply with the flight and duty regulations in part 121 and 14 CFR part 135, as appropriate, unless the Administrator has granted a deviation under 14 CFR part 119, §§ 119.55 or 119.57. This section addresses various supplemental operations that require flying into or out of hostile areas, and politically sensitive, remote areas that do not have rest facilities. This authority is issued on a case-by-case basis during an emergency situation as determined by the Administrator. These operations range from moving armed troops for the U.S. military, conducting humanitarian relief, repatriation, Air Mobility Command (AMC), and State Department missions.

**A. Application of Emergency and Government-Sponsored Operations.** The purpose of this section is to address true emergency situations and operations that are being conducted under contract with the U.S. Government that pose exceptional circumstances that would otherwise prevent a flightcrew member from being relieved from duty or safely provided with rest at the end of the FDP. This section is not meant to address self-induced emergencies that arise from inadequate planning. Certificate holders must be responsible for having appropriate onboard rest facilities or the proper number of flightcrew members available for the length of the duty day, if necessary.

**B. PIC Limited Authority to Extend an FDP.** The PIC may determine that maximum applicable FDPs must be exceeded to the extent necessary to allow the flightcrew to fly to the

closest destination where they can safely be relieved from duty by another flightcrew or can receive the requisite amount of rest prior to commencing their next FDP.

**C. Prohibition on Exceeding Cumulative Limitations.** An FDP may not be extended for an operation conducted pursuant to a contract with the U.S. Government if it causes a flightcrew member to exceed the cumulative flight time limits in § 117.23(b) and the cumulative FDP limits in § 117.23(c).

**D. Required Rest.** The flightcrew shall be given a rest period immediately after reaching the destination equal to the length of the actual FDP or 24 hours, whichever is less.

**E. Reporting FDP Extensions Under This Section.** Each certificate holder must report to the FAA within 10 days:

1) Any FDP that exceeded the maximum FDP permitted in Tables B or C of part 117, as applicable, by more than 30 minutes; and

2) Any flight time that exceeded the maximum flight time limits permitted in Table A of part 117 and § 117.11, as applicable.

**F. Contents of the FDP Extension Report.** The report must contain the following:

1) A description of the extended FDP and flight time limitation, and the circumstances surrounding the need for the extension; and

2) If the circumstances giving rise to the extension(s) were within the certificate holder's control, the corrective action(s) that the certificate holder intends to take to minimize the need for future extensions.

**G. Implementation of Corrective Actions.** Each certificate holder must implement the corrective action(s) reported in the FDP extension report within 30 days from the date of the extended FDP.

**RESERVED.** Paragraphs 3-4707 through 3-4748.

**VOLUME 3 GENERAL TECHNICAL ADMINISTRATION****CHAPTER 58 MANAGEMENT OF AVIATION FATIGUE****Section 3 Guidance Evaluation and Qualification of Onboard Flightcrew Member Rest Facilities for Part 117 Operations**

**3-4722 GENERAL.** This section provides the inspector with the necessary guidance to evaluate and qualify a certificate holder's onboard flightcrew member rest facilities as meeting the specifications and criteria of a Class 1, 2, or 3 facility.

**3-4723 BACKGROUND.** Under Title 14 Code of Federal Regulations (14 CFR) part 121, §§ 121.485(a) and 121.523(b), if a flightcrew member is scheduled to fly more than 12 hours during any 24-consecutive hour period, the certificate holder must provide the flightcrew member with "adequate" sleeping quarters. The criteria for adequate sleeping quarters may be found in Advisory Circular (AC) 121-31, Flight Crew Sleeping Quarters and Rest Facilities. Additionally, the Federal Aviation Administration (FAA) has issued legal interpretations defining the meaning of adequate sleeping quarters (see letter to Mr. Wells dated 9/22/03) in which the FAA stated, "Generally, an adequate rest facility means a bunk or berth." However, the industry has loosely interpreted the meaning of a rest facility, which has resulted in a wide variation of sleeping quarters.

**NOTE:** It is important to note that the purpose of a rest facility is to provide a suitable area for flightcrew members to rest during long-haul operations while operating in an augmented crew configuration.

**A. Title 14 CFR Part 117.** On January 4, 2012, the FAA published (final rule) 14 CFR part 117, Flightcrew Member Flight and Duty Time Limitations and Rest Requirements. Part 117 prescribes many limitations supporting fatigue mitigation that are based on current fatigue science. Part 117 established three classes of onboard flightcrew member rest facilities. The minimum criteria required for a rest facility to be qualified as meeting either a Class 1, 2, or 3 designation is defined in § 117.3 and outlined in AC 117-1, Flightcrew Member Rest Facilities.

**B. Qualification.** Qualification of an onboard rest facility is an essential function for determining whether a particular rest facility meets the criteria of one of the three classes. Once the FAA qualifies that rest facility as meeting one of the three classifications prescribed in part 117, the classification for that specific airplane will remain in effect until the rest facility is modified or the FAA determines it no longer meets its previously qualified status. Ensuring that a rest facility meets and is maintained to its qualified classification is crucial as the class of rest facility used is one of the three elements required to determine a flightcrew member's maximum flight duty period (FDP) limit for augmented operations.

**3-4724 DIFFERENCES BETWEEN A REST FACILITY AND A SUITABLE ACCOMMODATION.** In an effort to eliminate confusion between the terms rest facility and a suitable accommodation, part 117 defines a rest facility as a bunk or seat accommodation installed in an airplane that provides a flightcrew member with sleep opportunity.

**A. Suitable Accommodation.** A suitable accommodation means a temperature-controlled facility with sound mitigation, the ability to control light and provides a flightcrew member with the ability to sleep either in a bed, bunk, or in a chair that allows for a flat or near flat sleeping position. Suitable accommodation only applies to ground facilities and does not apply to airplane onboard rest facilities.

**B. Classification of Rest Facilities.** Each classification of a rest facility is designed to provide a minimum sleep quality based upon its classification. A Class 1 facility provides good sleep, a Class 2 provides fair sleep, and a Class 3 provides poor sleep quality. The better the quality of sleep the longer the flightcrew member's maximum FDP limit. Conversely, the lesser the sleep quality, the shorter the flightcrew member's FDP limit. Part 117, § 117.3 defines the classification of each onboard flightcrew member rest facility based upon the following physical characteristics, specifications, and design criteria:

1) Class 1 rest facility means a bunk or other surface that allows for a flat sleeping position and is located separate from both the flight deck and passenger cabin in an area that is temperature-controlled, allows the flightcrew member to control light, and provides isolation from noise and disturbance.

2) Class 2 rest facility means a seat in an airplane cabin that allows for a flat or near flat sleeping position, is separated from passengers by a minimum of a curtain to provide darkness and some sound mitigation, and is reasonably free from disturbance by passengers or flightcrew members.

3) Class 3 rest facility means a seat in an airplane cabin or flight deck that reclines at least 40 degrees and provides leg and foot support.

**3-4725 TNO REPORT.** During the development of part 117, with regard to what constitutes each specific type of rest facility, the FAA took note of a comprehensive evaluation of available onboard rest facilities (refer to pages 343-345 of the part 117 preamble), which was conducted by the Dutch government in 2007 (Simons M., Spencer M., Extension of Flying Duty Period by In-Flight Relief Report TNO–DV2007C362. TNO, Soesterberg, Netherlands, 2007 (TNO Report)). The TNO Report was created in order to provide science-based advice on the maximum permissible extension of the FDP related to the quality of the available onboard rest facility and the augmentation of the flightcrew with one or two pilots. As such, the FAA relied heavily on the data contained in the TNO report.

### **3-4726 FDP LIMITS.**

**A. Relationship Between Rest Facility Qualification and Augmented FDP Limits.** The FDP limits for augmented operations may be found in Table C of part 117 and are reflected in Figure 3-163, Table C to Part 117 – Flight Duty Period: Augmented Operations (see Volume 3, Chapter 58, Section 2.) In determining the flightcrew member's maximum FDP limits, the FAA took note of the recommendations set out in the TNO Report. The TNO Report recommended that:

1) An airplane with a Class 1 rest facility provides an FDP extension equal to 75 percent of the duration of the rest period,

2) An airplane with a Class 2 rest facility provides an FDP extension equal to 56 percent of the duration of the rest period, and

3) An airplane with a Class 3 rest facility provides an FDP extension equal to 25 percent of the duration of the rest period.

NOTE: The augmented FDP limits in Table C of part 117 (see Figure 3-163) are based on the quality of rest opportunity that would be provided the flightcrew member while in the rest facility.

**B. Difference Between Maximum FDP Limits and Maximum Applicable FDP Limits.** FDP limits apply to the individual flightcrew member. For the purpose of augmented flightcrew member operations, Table C of part 117 (see Figure 3-163) prescribes a flightcrew member's maximum FDP limits based upon the class of rest facility used, the number of pilots assigned, and the flightcrew member's scheduled time of start. The table assumes the flightcrew member is acclimated; however, if the flightcrew member is not acclimated their maximum FDP limit must be reduced by 30 minutes. The term "maximum applicable FDP limit" illustrates the flightcrew member's maximum FDP limits based upon the class of rest facility, number of pilots assigned, scheduled time of start and whether the flightcrew member is acclimated.

### **3-4727 REST FACILITIES.**

**A. Physical Location of the Rest Facility.** The certificate holder must consider many factors when determining the location of an onboard rest facility. Such factors include isolation from disturbance by passengers and other crewmembers, environmental noise, and the location of the rest facility with respect to the serving carts and around the galley areas. Rest facilities should not be located in the economy-class section of the airplane. One of the reasons why an economy-class seat does not provide restful sleep is that space around the seat is not sufficient to create an adequate separation from the passengers (economy jostling). Because there are substantially more passengers in the economy section of an airplane, that section is generally noisier and have more densely-packed people than the other sections of the airplane. In addition, the FAA notes that economy cabins are generally located behind the airplane engines, and thus, have to deal with louder engine noise. Due to all of these considerations, locating a rest facility in the economy section would reduce the restfulness of the sleep obtained by a flightcrew member.

**B. Prohibition on the Use of an Economy-Class Passenger Seat as a Rest Facility.** The decision to not consider an economy-class seat as a rest facility was based on the TNO Report (refer to pages 343-345 of the preamble to part 117), which determined that "the probability of obtaining recuperative sleep in such a seat would be minimal" on the following considerations:

1) An economy-class seat does not recline more than 40 degrees "and has no opportunities for adequate foot and leg rest, which diminishes the probability of recuperative sleep,"

2) "Space around the seat is not sufficient to create an adequate separation from the passengers (jostle in economy class), or guarantee any privacy," and

- 3) “A majority of passengers are unable to sleep at all in an economy seat.”

NOTE: In developing part 117, the FAA agreed with the TNO Report’s analysis of economy-class passenger seats and based on this analysis, which states that economy-class seats provide minimal amounts of recuperative sleep, the FAA has determined that economy-class seats should not be considered as a rest facility for the purposes of part 117. To that end, the FAA will not accept an economy-class seat as a rest facility because the TNO Report has determined that these types of seats provide a minimal amount of restful sleep.

**C. Relationship Between Rest Facility and Sleep Surface.** A sleep surface is the fundamental part of the rest facility and may be a bed, bunk, or a seat based upon the classification of rest facility. Each class of rest facility has physical specifications relative to that specific classification.

**D. When a Rest Facility is Required.** A rest facility is required any time the flightcrew is augmented. The rest facility used must meet one of the three classifications outlined in § 117.3.

### 3-4728 DEFINITIONS.

**A. Applying Augmentation.** The primary purpose of augmentation is to provide the operating flightcrew members with in-flight rest relief. However, in-flight rest may not be the only reason for the application of augmentation. A certificate holder may augment the minimum required flightcrew because their planned FDP and/or flight time may exceed their maximum applicable FDP and/or flight time limits prescribed for unaugmented operations. For example, an unaugmented flightcrew is assigned an FDP starting at 0700 hour; with 5 planned segments during that FDP, the flightcrew member’s maximum applicable FDP limit would be 12.5 hours (see Figure 3-162, Table B to Part 117 – Flight Duty Period: Unaugmented Operations (Volume 3, Chapter 58, Section 2). Due to operational necessity, the planned FDP requires 13.5 hours.

1) The certificate holder has a few potential options available. First, they could potentially extend the flightcrew member’s FDP with pilot in command (PIC) concurrence. However, if the option of an extension is not available, the certificate holder could reduce the number of segments during that FDP to two segments (14-hour FDP limit) or plan to augment that FDP. Applying the augmentation FDP limits (see Figure 3-163), a flightcrew consisting of three pilots with a scheduled time of start of 0700, and using a Class 3 rest facility, the flightcrew member’s maximum applicable FDP limit would now be 15 hours. A similar approach can be applied to flight time limits. Considering the same scheduled time of start in an unaugmented operation, the planned flight time may exceed 9 hours. In this case, by using augmentation (three pilots), the flightcrew would have a new flight time limit of 13 hours during that augmented FDP.

2) Flightcrew members serving in an augmented crew are considered to be in excess of the minimum required flightcrew member complement. Because the entire flightcrew would consist of 3 or 4 pilots, their maximum applicable FDP limit would be determined by use of

Table C of part 117 (see Figure 3-163). Table C of part 117 prescribes the flightcrew member's FDP limits based upon three criteria: the FDP scheduled time of start, the number of pilots assigned to the FDP, and the classification of rest facility being used. Flight time limits for 3 and 4-pilot crews are prescribed in § 117.11(a)(2)(3), which are 13 and 17 hours, respectively.

**B. Evaluation and Qualification Inspection.** An evaluation and qualification inspection is a two-step process performed by the principal operations inspector (POI) (or the Aircraft Evaluation Group (AEG) for Class 1 rest facilities). The purpose of the inspection is to ensure the rest facility and sleep surface conforms to its design and operational criteria and conforms to the limitations and specifications prescribed in § 117.3. The first step is to review the data contained in the certificate holder's technical report for the rest facility being qualified. The second step is to perform a qualification inspection using the appropriate Qualification Analysis Statement (QAS) (See Figure 3-191, Qualification Analysis Statement Class 1 Rest Facility; Figure 3-192, Qualification Analysis Statement Class 2 Rest Facility; and Figure 3-193, Qualification Analysis Statement Class 3 Rest Facility).

**C. Technical Report.** The certificate holder will prepare a technical report pertinent to the class of rest facility being qualified explaining how the rest facility complies with part 117 and the guidance in AC 117-1. The purpose of the technical report is to provide the POI or AEG with the necessary supporting documentation for qualification of the rest facility. The technical report must identify the installation approval source for the specific class of rest facility being qualified. The installation approval source may be from the airplane's type certificate (TC) and reflected in the Type Certificate Data Sheet (TCDS), a Supplemental Type Certificate (STC) or a Designated Engineering Representative (DER) approval. In the event the Flight Standardization Board (FSB) Report for that airplane type includes and identifies a specific rest facility that meets the criteria prescribed in § 117.3 for a specific class of rest facility, this data may be used as a substitute for the installation approval source provided the rest facility is identical to class included in the FSB.

1) The technical report must contain a complete list of the certificate holder's airplanes (by registration and serial number, make, model and series (M/M/S)) that correspond to the installation approval for the specific class of rest facility being qualified. The technical report is instrumental in providing relevant data applicable to the all the rest facilities installed under a particular installation approval. Absence of this data will result in the FAA evaluating each rest facility separately.

2) When the certificate holder is prepared to have their rest facilities qualified they will make this request through their POI. With this notification, the certificate holder should provide their POI with a copy of a technical report. It is important for the certificate holder to recognize that a more organized and complete technical report will result in a smoother evaluation and qualification. The technical report should contain the following data:

a) A list of airplanes, by registration number, serial number, M/M/S, classification of rest facility to be qualified, and the number of sleep surfaces installed under that classification.

- b) The method for approval of the rest facility installation such as TC, STC, DER approval or another acceptable means of approval. If applicable, a statement from the FSB stating the rest facility meets the criteria prescribed in § 117.3.
- c) Specific dimensions and layout of the rest facility and sleep surface (photographs, drawings, diagrams, etc.) and its location on the airplane.
- d) Operating instructions pertinent to the operation and use of the sleep surface and rest facility.
- e) Design features for the specific rest facility class qualification.
- f) Sound mitigation data for Class 1 rest facilities.
- g) Sound mitigation data and operating procedures applicable to curtain installed for a Class 2 rest facility.
- h) Any other appropriate approved data supporting the proposed qualification of rest facility.
- i) If applicable, a differences table identifying the differences associated with the class of rest facility under this installation approval.
- j) Augmented operations procedures.
- k) In the event the design of the rest facility requires some preparation by the crew prior to use, such as expanding sections, the evaluation request should include appropriate preparation procedures, and recommended qualification/training requirements (if required).

**D. Differences Table.** In any class of rest facilities under the same installation approval source, the design, location and layout should be identical. However, in the event differences exist in a class of rest facility under the same installation, the certificate holder should identify those differences and incorporate them into a differences table. The table should be included in the certificate holder's technical report.

**E. QAS.** There are three QAS documents, one document applicable for each classification of rest facility. Each QAS (Class 1, 2 or 3) document contains a checklist of items applicable to that classification of rest facility. When evaluating and qualifying a rest facility, the inspector (or AEG) must use the appropriate QAS for the classification being conducted.

**F. Completing the QAS.** Prior to completing, the POI or AEG should review the data within the certificate holder's technical report that outlines the design criteria and specifications for the class of rest facility being qualified. This data should outline the information supporting the class of rest facility to be qualified. The QAS should be completed in the following manner:

- 1) **Certificate Holder:** Enter the name of the certificate holder.
- 2) **Certificate No.:** Enter the certificate holder's air carrier certificate number.

**3) TC/STC/DER Approval:** For Class 1 rest facilities qualification only, in the installation approval is under the airplane TC, enter the TC number. For all classes of rest facilities where the installation approval is under a STC or DER approval, enter the STC or DER approval for that class of rest facility.

**4) M/M/S:** Enter the airplane M/M/S.

**5) Registration No.:** Enter the airplane registration number.

**6) Serial No.:** Enter the serial number of the airplane.

**7) Number of Sleep Surfaces:** Enter the number of sleep surfaces installed in the airplane under the classification for which the rest facility is qualified.

**G. Operation Specification (OpSpec) A117.** OpSpec A117, Use of Onboard Flightcrew Member Rest Facilities, must be issued to the certificate holder prior to conducting augmented flightcrew member operations using the FDP limits prescribed in Table C of part 117. OpSpec A117 serves as the source document identifying each of the certificate holder's airplanes having installed rest facilities based upon the class of rest facility and the number of sleep surfaces under that classification. This data corresponds to the airplane (M/M/S, registration and serial number) listed in OpSpec A117.

**H. Relationship Between the QAS and OpSpec A117.** The completion of a QAS initiates the issuance of, or update to, the certificate holder's OpSpec A117. The POI will be responsible for the issuance of OpSpec A117 and, if applicable, the subsequent addition or deletion of the certificate holder's airplanes having rest facilities. At the conclusion of a satisfactory qualification of class 1 rest facility, once the AEG has completed the qualification evaluation and prepared the QAS, they will forward a copy to the POI.

NOTE: The certificate holder's technical report should contain a list of all their airplanes (by M/M/S) that have rest facilities under the same rest facility classification and installation approval. When preparing the certificate holder's OpSpec A117, the POI should have a copy of the technical report and the completed QAS. Refer to the technical report for a list of all the certificate holder's airplanes (by M/M/S and registration and serial number) that have the same installation approval and the same class of rest facility qualified by this QAS. Insert each of these airplanes by M/M/S, registration and serial number, class of rest facility, qualification date, and the number of sleep surfaces.

**I. Augmented Operations Procedures.** The certificate holder should develop augmented operations procedures relative to the use of the specific onboard rest facilities and sleep surface. The certificate holder should provide the POI (or AEG inspector) with a copy of their augmentation operating procedures. At a minimum, the certificate holder's augmented operations procedures should include the following:

- 1) Specific operating procedures relative to the operation of the rest facility and sleep surface for augmented flightcrew operations,
- 2) Use of Table C in part 117 to determine a flightcrew member's maximum applicable FDP limits,
- 3) Procedures for the loss of cabin altitude while in the rest facility,
- 4) Emergency communications procedures between the flight deck crew and the flightcrew member(s) in the rest facility,
- 5) Procedures for smoke in the cabin for flightcrew members in the rest facility, and
- 6) Procedures for dealing with fires in the rest facility.

### **3-4729 EVALUATION AND QUALIFICATION.**

**A. Paths for Evaluation and Qualification of Rest Facilities.** Evaluation and qualification of onboard rest facilities will follow one of four paths:

- 1) Existing rest facilities (adequacy evaluated in accordance with AC 121-31),
- 2) Newly installed Class 1,
- 3) Newly installed Class 2 and 3, and
- 4) Previously qualified rest facilities (Class 1, 2, or 3 in accordance with the criteria established in part 117).

**B. Responsibility for Evaluating and Qualifying a Rest Facility.** The responsibility for evaluating and qualifying rest facilities is determined by the classification sought by the certificate holder.

**1) Class 1 Rest Facilities.** Due to the specification and design criteria of a Class 1 facility, the AEG having responsibility of that airplane type will conduct the evaluation and qualification. The AEG will keep the POI having oversight responsibility of that certificate holder involved throughout the process.

**2) Class 2 and 3 Rest Facilities.** The POI having oversight responsibility of that certificate holder will be responsible for conducting the evaluation and qualification of Class 2 and 3 rest facilities with the AEG serving in an advisory role. The AEG will serve in an advisory role to the POI.

**C. The Qualification Process.** The classification of the onboard rest facilities (i.e., Class 1, 2, and 3) is one of the three elements used to determine the augmented flightcrew member's maximum FDP limit. Therefore, it is imperative that the certificate holder's rest facilities are properly evaluated and qualified as meeting one of the classifications (Class 1, 2

or 3) prescribed in § 117.3 prior to using that airplane in augmented flightcrew member operations.

1) Early identification of the qualification project is essential for ensuring a timely rest facility evaluation. Requests for FAA qualification of the rest facility should be made in a timely manner so that an inspection and evaluation of the rest facility may be scheduled after the installation is complete for newly installed facilities, and for existing facilities. Therefore, the certificate holder should submit their request for rest facility qualification to their POI as early as possible. If the qualification project is for a Class 1, the POI must forward this request to the AEG having responsibility for that airplane type.

2) Requests should also include a technical report (as described in this document) relative to the rest facility being qualified. In the event the design of the rest facility requires some preparation by the crew prior to use, such as expanding sections, the evaluation request should include appropriate preparation procedures, and recommended qualification/training requirements (if applicable).

**D. Installation Approval.** The data contained in the installation approval specifies the design criteria, operational specifications and materials used along with the layout of the facility as well as its location on the airplane. Each class of rest facility installed under a specific approval should be identical to another under of that same approval. For this reason, when the certificate holder prepares their technical report they should list in the technical report each airplane with rest facilities (M/M/S, registration and serial number) corresponding to its installation approval source for that classification. Therefore, when evaluating a certificate holder's rest facility, the POI (or AEG) need only inspect one class of rest facility under that installation approval per airplane type. As an example, a certificate holder operates ten (10) Boeing B-767 airplanes, each having two (2) Class 2 rest facilities installed under the same installation approval and the layout is identical. Under this example only one of the certificate holder's ten (10) B-767's need to be evaluated as the remaining nine (9) B-767 airplanes will fall under this qualification. The certificate holder's technical report should reflect ten (10) B-767 (individually listed by registration and serial number, and M/M/S) under the same installation approval, each airplane having two (2) Class 2 rest facilities.

**E. Rest Facility Differences.** If differences exist in a particular class of rest facility under the same installation approval, these differences must be reflected in the certificate holder's technical report corresponding to the specific airplane by M/M/S and registration and serial number. Such differences include, but are not limited to, number of sleep surfaces, the sleep surface, sound mitigation data for Class 1 and 2 facilities, design and layout, location of the rest facility and airplane type. The certificate holder should develop a table outlining the rest facility differences applicable to the class of rest facility, the airplane type and the installation approval for that rest facility. The differences table should be incorporated into the certificate holder's technical report for that class of rest facility and airplane type. The differences table must be evaluated to determine if individual evaluations must be conducted for each of the rest facilities having those differences. If the differences are common to a given number of airplanes of the same type, then only one of those airplane's rest facilities with common differences needs to be evaluated. Otherwise, each airplane's rest facilities with differences must be evaluated individually.

**F. Conducting the Rest Facility Evaluation and Qualification Inspection.** When conducting a rest facility evaluation and qualification inspection:

1) For Class 1 rest facilities, the AEG will review the data in the certificate holder's technical report and supporting documentation to determine if it supports Class 1 criteria. Using the data in the technical report and conducting a physical inspection of the rest facility, the AEG will complete the Class 1 QAS checklist. If the AEG determines that an item required for the Class 1 qualification does not meet the criteria, the AEG will notify the POI of the findings. The certificate holder will be advised by the POI that they have three options. They can make the necessary corrective actions and reschedule another inspection by the AEG, evaluate the rest facility to a lower class (i.e., Class 1 to a Class 2), or contact the Air Transportation Division, AFS-200, to pursue a Fatigue Risk Management System (FRMS) application. If the certificate holder elects to have the rest facility evaluated to a lower class, that evaluation responsibility rests with the POI. In this case the AEG would serve in an advisory role to the POI. If, however, the AEG qualifies the rest facility as a Class 1, the AEG will forward a copy of the completed Class 1 QAS to the POI.

2) For Class 2 rest facilities, the POI will review the data in the certificate holder's technical report and supporting documentation to determine it supports Class 2 criteria. Using the data in the technical report and conducting a physical inspection of the rest facility, the POI will complete the Class 2 QAS checklist. If the POI determines that an item required for the Class 2 qualification does not meet the criteria, the POI will advise the certificate holder that they have three options. They can make the necessary corrective actions and reschedule another inspection with the POI, evaluate the rest facility to a lower class (i.e., Class 2 to a Class 3), or contact AFS-200 to pursue an FRMS application. If the certificate holder elects to have the rest facility evaluated to a lower class, that evaluation responsibility rests with the POI. The AEG would serve in an advisory role to the POI, if necessary. If the POI determines the rest facility qualifies as a Class 2, the POI will complete the Class 2 QAS.

3) For Class 3 rest facilities, the POI will review the data in the certificate holder's technical report and supporting documentation to determine it supports Class 3 criteria. Using the data in the technical report and conducting a physical inspection of the rest facility, the POI will complete the Class 3 QAS checklist. If the POI determines that an item required for the Class 3 qualification does not meet the criteria, the POI will advise the certificate holder that they have two options. They can make the necessary corrective actions and reschedule another inspection with the POI, or contact AFS-200 to pursue an FRMS application. The AEG will serve in an advisory role to the POI, if necessary. If the POI determines that the rest facility qualifies as a Class 3, the POI will complete the Class 3 QAS.

**G. Qualifying a Class 1 Rest Facility and Existing Rest Facilities (Adequacy Evaluated in Accordance with AC 121-31).** If the request for qualification is for a Class 1 rest facility, the POI will forward that request to the AEG having responsibility for that airplane type. The certificate holder will provide the POI with the instructions for continued airworthiness (ICA), the technical report, approved data and other supporting data relative to the class of rest facility at the time of the qualification request. Along with this request, the POI will forward a copy of the technical report, approved data and other supporting documentation to the AEG. The AEG will coordinate with the POI throughout the evaluation. The AEG will coordinate with the

certificate holder to schedule a time and location to conduct the evaluation. The AEG will conduct an evaluation and qualification to evaluate and inspect the rest facility for compliance with part 117. The qualification is accomplished by use of the Class 1 QAS checklist. If a question in the checklist yields a “NO” response, it means the rest facility is not qualified as a Class 1. Therefore, to be qualified as a Class 1 rest facility, each question in the Class 1 QAS must yield a “YES” response.

1) Once the rest facility has been qualified as meeting the criteria and specifications prescribed in part 117 for a Class 1, the AEG will issue a Class 1 QAS for that rest facility. Once issued, the AEG will forward a copy of the completed Class 1 QAS to the POI to initiate the issuance of OpSpec A117. The AEG will retain a copy of the completed Class 1 QAS.

2) The qualification will remain in effect until a modification to the rest facility or a component of the rest facility renders it noncompliant with the criteria and specifications prescribed in part 117 for that classification, or the FAA determines the rest facility no longer meets the criteria and specification(s) prescribed in part 117 for that classification.

**H. Qualifying Class 2 and 3 Rest Facilities.** Requests for FAA qualification of the rest facility should be made in a timely manner to the certificate holder’s POI so that an inspection and evaluation of the rest facility may be scheduled after the installation is complete. Class 2 and 3 flightcrew member rest facilities will be inspected and evaluated by the POI having oversight responsibilities of the certificate holder. The AEG responsible for that airplane type will serve in an advisory role to the POI. The POI will confer with the AEG as necessary during this process. The certificate holder will provide the POI with the proposed ICA, technical report, approved data and other supporting data relative to the class of rest facility at the time of the qualification request. Also, in the event the design of the rest facility requires some preparation by the crew prior to use, such as expanding sections or leg and foot support, the evaluation request should include appropriate preparation procedures, and recommended qualification/training requirements.

1) Each rest facility is installed under a specific approval. The data contained in the approval specifies the design criteria, operational specifications material to be used along with the layout of the facility, as well as its location on the airplane. Each rest facility installed under a specific approval should be identical to another under of that same approval. For this reason, when the certificate holder prepares their technical report they should list each airplane with rest facilities (M/M/S, registration and serial number) corresponding to its installation approval source. Therefore, when evaluating a certificate holder’s rest facility, the POI need only inspect one rest facility under that installation approval per airplane type.

2) The certificate holder will provide the POI with a copy of the technical report and other supporting documentation relative to the rest facility to be qualified. The POI will coordinate with the certificate holder to schedule a time and location to conduct the evaluation. They will conduct an evaluation and qualification to evaluate and inspect the rest facility for compliance with part 117. The qualification is accomplished by use of the Class 2 or 3 QAS checklist, as appropriate. Any question in the checklist that yields a “NO” response means the rest facility is not qualified for that classification. Therefore, to be qualified as a Class 2 or 3 rest

facility, as appropriate, each question in the respective QAS must yield a “YES” response. Otherwise, the rest facility is not qualified.

3) If the POI has determines the rest facility meets either the Class 2 or 3 qualification, the POI will issue the appropriate QAS for that rest facility classification. A copy of the QAS will be provided to certificate holder. The QAS will remain in effect until a modification to the rest facility or a component of the rest facility renders it noncompliant with the criteria and specifications prescribed in part 117 for that classification, or the FAA determines the rest facility no longer meets the criteria and specification(s) prescribed in part 117 for that classification.

**I. FRMS Application for Rest Facilities.** In the event a certificate holder elects to apply for an FRMS authorization for rest facilities, the POI (or AEG for class 1) should direct the certificate holder to review the current edition of AC 120-103, Fatigue Risk Management Systems for Aviation Safety, and contact AFS-200 at 202-267-8166. All FRMS applications and authorizations are processed by AFS-200.

**J. Modifications and Repairs to Rest Facilities.** Modifications and repairs that alter any part of the original specifications of the rest facility may disqualify it from the previously qualified classification.

**K. Requalification of Previously Qualified Rest Facilities.** Requalification of a previously qualified rest facility is required when an item or component associated with the rest facility is modified or altered in any way, except when an inoperative item or component of the rest facility is covered and properly deferred in accordance with the certificate holder’s FAA-approved MEL and its associated procedures. The purpose for requalifying a previously qualified rest facility is to determine that the modification(s) or alteration(s) have not changed the facility’s physical specifications beyond that classification previously qualified and is in compliance with part 117. If the FAA determines the modified or altered rest facility does not meet the classification previously qualified, the rest facility may be evaluated to a different (lower) classification, if applicable. If the FAA determines that the rest facility does not meet any of the three classifications, the airplane may not be used for augmented flightcrew operations and may not use the augmented FDP limits while operating that airplane. If determined that the rest facility does not meet any of the three classifications, or if a rest facility loses its qualification, the POI must remove the airplane from the certificate holder’s OpSpec A117.

1) The AEG responsible for that airplane type is responsible for inspection, evaluation and requalification of previously qualified Class 1 rest facilities. Inspection and evaluation of previously qualified Class 2 and 3 onboard rest facilities is the responsibility of the POI. The AEG responsible for that airplane type will serve in an advisory role to the POI. The POI will confer with the AEG as necessary during this process.

2) For requalification of a Class 1 rest facility, the AEG will follow the same process outlined in this document for the qualification of Class 1 rest facilities. For Class 2 and 3 rest facilities, the POI having oversight responsibility of the certificate holder will follow the same process outlined in this document for the qualification of Class 2 and 3 rest facilities, as appropriate.

3) Once the airplane's onboard rest facility has been satisfactorily requalified, the POI will complete the applicable QAS. The completed QAS will initiate the update to the certificate holder's OpSpec A117. The qualification will remain in effect until a modification to the rest facility or a component of the rest facility renders it noncompliant with the specifications prescribed in part 117, or the FAA determines the rest facility no longer meets the specification(s) prescribed in part 117 for that classification.

**L. Upgrading a Rest Facility.** In some cases, the certificate holder may upgrade their rest facility to meet the specifications for a higher rest facility classification, which will require that rest facility to be requalified before using the FDP limits applicable for the higher rest facility classification. If the requalification is satisfactory to a higher classification, prior to using the airplane for augmented operations with the higher FDP limits, the certificate holder's OpSpec A117 must be updated to reflect the newly qualified rest facility.

**M. Downgrading a Rest Facility.** If a rest facility is downgraded to a lower classification for reasons other than those identified in the certificate holder's FAA-approved MEL, the POI must reflect this downgraded status by conducting an evaluation and qualification of the rest facility, complete the appropriate class of QAS, and reissue the certificate holder OpSpec A117 reflecting the new classification of rest facility and number of sleep surfaces under that new classification.

**N. FRMS Authorization.** In certain cases a certificate holder may elect to apply for an FRMS authorization specific to a rest facility. For example, a certificate holder's rest facility may not comply with the all the criteria and specifications outlined in part 117 for a Class 1. The certificate holder would develop an alternative method of compliance (AMOC) that demonstrates an equivalent level of safety applicable to the safety standards set forth in part 117. All FRMS applications should be submitted to AFS-200 for processing (refer to AC 120-103). AFS-200 will coordinate directly with the certificate holder and involve the POI throughout this process. After completion of the studies and validation of the data collected, if the FRMS application is approved, AFS-200 will provide the POI with an approval memo classifying that rest facility to its demonstrated classification based upon the validated AMOC and associated data. In addition, AFS-200 will provide the POI with an OpSpec A318 (FRMS Authorization) template containing the pertinent data to be populated into the OpSpec, which will include the applicable conditions and limitations for that authorization.

**O. Issuance of the QAS and OpSpec A117.** Prior to conducting augmented flightcrew operations, and using the augmented flightcrew member FDP limits, the certificate holder must be issued OpSpec A117 reflecting the airplane and the classification of rest facility to be used. The issuance of OpSpec A117 is contingent on the completion of the appropriate QAS qualifying that rest facility under one of the three classifications. The POI should refer to the guidance in Volume 3, Chapter 18, Section 3 for the issuance of OpSpec A117. OpSpec A117 must contain the following information:

- 1) M/M/S,
- 2) Airplane registration number,

- 3) Airplane serial number,
- 4) Qualification date,
- 5) Classification of rest facility, and
- 6) Number of installed sleep surfaces for that classification.

**Figure 3-191. Qualification Analysis Statement Class 1 Rest Facility**

| <b>QUALIFICATION ANALYSIS STATEMENT<br/>CLASS 1 REST FACILITY</b>  |   |                            |                              |
|--|---|----------------------------|------------------------------|
| <b>Certificate Holder</b>  | <b>Certificate No.</b>  | <b>TC/STC/DER Approval</b> |                              |
|  |   |                            |                              |
| <b>Make/Model/Series</b>   | <b>Registration No.</b>   | <b>Serial Number</b>       | <b>No. of Sleep Surfaces</b> |
|  | <b>N</b>  |                            |                              |
| <p>A Class 1 rest facility is defined in Title 14 Code of Federal Regulations (14 CFR) part 117 as a bunk or other surface that allows for a flat sleeping position and is located separate from both the flight deck and passenger cabin in an area that is temperature-controlled, allows the flightcrew member to control light, and provides isolation from noise and disturbance.</p> <p>Certification of this Qualification Analysis Statement (QAS) qualifies this installed onboard flightcrew member rest facility as a Class 1 rest facility. Unless otherwise authorized by an FAA-approved Fatigue Risk Management System (FRMS), when conducting augmented flightcrew member operations, the certificate holder and the flightcrew members must comply with the maximum flight duty period limits (FDP) prescribed in Table C of 14 CFR part 117 based upon the use of this qualified Class 1 rest facility, the flightcrew member's time of start and the number of assigned flightcrew members. However, when an augmented flightcrew consisting of four or more pilots using multiple classes of rest facilities installed on a single aircraft, the maximum FDP limits applicable to the lowest classification of installed rest facility (Class 1 is the highest and Class 3 is the lowest classification) apply based upon the number of assigned flightcrew members, start time of the flightcrew member's FDP, and classification of rest facility.</p> <p>This qualification will remain in effect until a modification to this rest facility renders it noncompliant with the specifications qualifying it as a Class 1 rest facility, or the FAA determines the rest facility no longer meets the requirements prescribed in 14 CFR part 117 for a class 1 rest facility.</p> <p>Modifications and repairs that alter any part of the original specifications for a Class 1 rest facility may disqualify it from its previously qualified classification. If the rest facility classification is disqualified, requalification of the rest facility is required, except when an inoperative item or component associated with this rest facility is covered and deferred in accordance with the certificate holder's FAA-approved minimum equipment list (MEL).</p> <p>Prior to conducting augmented flightcrew operations, the certificate holder must be issued OpSpec A117, <i>Use of Onboard Flightcrew Member Rest Facilities</i>, authorizing the use of specific onboard rest facilities.</p> |   |                            |                              |
| <b>Evaluation and Qualification Analysis</b>   |   |                            |                              |
| <b>Item No.</b>  | <b>Item</b>   | <b>YES</b>                 | <b>NO</b>                    |
| 1.   | Is the physical location of each rest facility of this classification located in an area other than the economy section of the airplane?  |                            |                              |
| 2.   | Does the sleeping surface a bunk or other surface allow for a flat sleeping position and is located separate from both the flight deck and passenger cabin in an area that is temperature-controlled? |                            |                              |
| 3.   | Are the sleeping surfaces designed so that they are flat and as level as practicable during cruise flight?  |                            |                              |

| Item No. | Item   | YES | NO |
|----------|--|-----|----|
| 4.       | Do the dimensions of each sleep surface meet the 30"x78" recommendation and the volume per individual of 1.0 m <sup>3</sup> (35 feet <sup>3</sup> ).   |     |    |
| 5.       | Does the rest facility provide a suitable means to ensure occupant privacy for each sleeping surface area, e.g., curtains in an over-and-under arrangement or a divider curtain in a side-by-side arrangement.   |     |    |
| 6.       | Does the rest facility allow the flightcrew member to control light?   |     |    |
| 7.       | Does the facility provide isolation from noise and disturbance?  |     |    |
| 8.       | Is the rest facility area temperature-controlled?  |     |    |
| 9.       | Is airflow and temperature control available to provide a uniformly well-ventilated atmosphere free from drafts, cold spots, and temperature gradient?   |     |    |
| 10.      | Are suitable personal articles stowage and occupant restraint systems provided to each occupant's sleeping surfaces as well as each occupant of any seats located in crewmember rest facilities?   |     |    |
| 11.      | Are there one or more operational lighted "FASTEN SEAT BELTS" signs within the view of the occupants of each sleeping surface located within the rest facility?  |     |    |
|          | a.) If so, are these lighted signs dimmable for sleeping purposes?   |     |    |
| 12.      | Is an operational interphone available for the cockpit crewmembers to communicate with the sleeping crewmember(s)?<br><b>Note:</b> The FAA recommends that the public address system or an alternative means should include provisions to provide only relevant information to crewmembers in the crewmember rest facility (e.g., in flight emergencies, aircraft depressurization, preparation of compartment occupants for landing). |     |    |
| 13.      | Is approved oxygen equipment provided for each crewmember using a sleeping surface, including an aural alert to awaken a sleeping crewmember?  |     |    |
| 14.      | Does the rest facility have operational emergency lighting?  |     |    |
| 15.      | Does this rest facility meet the qualification specifications for a class 1 rest facility?   |     |    |
| Item No. | Comments and Remarks   |     |    |
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**Figure 3-192. Qualification Analysis Statement Class 2 Rest Facility**

| <b>QUALIFICATION ANALYSIS STATEMENT<br/>CLASS 2 REST FACILITY</b> |                         |                         |                              |
|---|-------------------------|-------------------------|------------------------------|
| <b>Certificate Holder</b>   | <b>Certificate No.</b>  | <b>STC/DER Approval</b> |                              |
|   |                         |                         |                              |
| <b>Make/Model/Series</b>  | <b>Registration No.</b> | <b>Serial Number</b>    | <b>No. of Sleep Surfaces</b> |
|   | <b>N</b>                |                         |                              |

A Class 2 rest facility is defined in Title 14 Code of Federal Regulations (14 CFR) part 117 as a seat in an aircraft cabin that allows for a flat or near flat sleeping position; is separated from passengers by a minimum of a curtain to provide darkness and some sound mitigation; and is reasonably free from disturbance by passengers or flightcrew members.

Certification of this Qualification Analysis Statement (QAS) qualifies this installed onboard flightcrew member rest facility as a Class 2 rest facility. Unless otherwise authorized by an FAA-approved Fatigue Risk Management System (FRMS), when conducting augmented flightcrew member operations, the certificate holder and the flightcrew members must comply with the maximum flight duty period limits (FDP) prescribed in Table C of 14 CFR part 117 based upon the use of this qualified Class 2 rest facility, the flightcrew member's time of start and the number of assigned flightcrew members. However, when an augmented flightcrew consisting of four or more pilots using multiple classes of rest facilities installed on a single aircraft, the maximum FDP limits applicable to the lowest classification of installed rest facility (Class 1 is the highest and Class 3 is the lowest classification) apply based upon the number of assigned flightcrew members, start time of the flightcrew member's FDP, and classification of rest facility.

This qualification will remain in effect until a modification to this rest facility renders it noncompliant with the specifications qualifying it as a Class 2 rest facility, or the FAA determines the rest facility no longer meets the requirements prescribed in 14 CFR part 117 for a Class 2 rest facility.

Modifications and repairs that alter any part of the original specifications for a Class 2 rest facility may disqualify it from its previously qualified classification. If the rest facility classification is disqualified, requalification of the rest facility is required, except when an inoperative item or component associated with this rest facility is covered and deferred in accordance with the certificate holder's FAA-approved minimum equipment list (MEL).

Prior to conducting augmented flightcrew operations, the certificate holder must be issued OpSpec A117, *Use of Onboard Flightcrew Member Rest Facilities*, authorizing the use of specific onboard rest facilities.

| <b>Evaluation and Qualification Analysis</b> |   |            |           |
|--|---|------------|-----------|
| <b>Item No.</b>                              | <b>Item</b>   | <b>YES</b> | <b>NO</b> |
| 1.   | Is the rest facility located in an area other than the economy section of the airplane?             |            |           |
| 2.   | Is the rest facility placarded to designate it as a class 2 rest facility?                          |            |           |
| 3.   | Does the seat (sleep surface) in the rest facility allow for a flat or near flat sleeping position? |            |           |
| 4.   | Is the rest facility separated from passengers by a minimum of a curtain to provide                 |            |           |



**Figure 3-193. Qualification Analysis Statement Class 3 Rest Facility**

| <b>QUALIFICATION ANALYSIS STATEMENT<br/>CLASS 3 REST FACILITY</b> |                         |                         |                              |
|---|-------------------------|-------------------------|------------------------------|
| <b>Certificate Holder</b>   | <b>Certificate No.</b>  | <b>STC/DER Approval</b> |                              |
|   |                         |                         |                              |
| <b>Make/Model/Series</b>  | <b>Registration No.</b> | <b>Serial Number</b>    | <b>No. of Sleep Surfaces</b> |
|   | <b>N</b>                |                         |                              |

A class 3 rest facility is defined in Title 14 Code of Federal Regulations (14 CFR) part 117 as a seat in an aircraft cabin or flight deck that reclines at least 40 degrees and provides leg and foot support.

Certification of this Qualification Analysis Statement (QAS) qualifies this installed onboard flightcrew member rest facility as a Class 3 rest facility. Unless otherwise authorized by an FAA-approved Fatigue Risk Management System (FRMS), when conducting augmented flightcrew member operations, the certificate holder and the flightcrew members must comply with the maximum flight duty period limits (FDP) prescribed in Table C of 14 CFR part 117 based upon the use of this qualified Class 3 rest facility, the flightcrew member's time of start and the number of assigned flightcrew members. However, when an augmented flightcrew consisting of four or more pilots using multiple classes of rest facilities installed on a single aircraft, the maximum FDP limits applicable to the lowest classification of installed rest facility (Class 1 is the highest and Class 3 is the lowest classification) apply based upon the number of assigned flightcrew members, start time of the flightcrew member's FDP, and classification of rest facility.

This qualification will remain in effect until a modification to this rest facility renders it noncompliant with the specifications qualifying it as a Class 3 rest facility, or the FAA determines the rest facility no longer meets the requirements prescribed in 14 CFR part 117 for a Class 3 rest facility.

Modifications and repairs that alter any part of the original specifications for a Class 3 rest facility may disqualify it from its previously qualified classification. If the rest facility classification is disqualified, requalification of the rest facility is required, except when an inoperative item or component associated with this rest facility is covered and deferred in accordance with the certificate holder's FAA-approved minimum equipment list (MEL).

Prior to conducting augmented flightcrew operations, the certificate holder must be issued OpSpec A117, *Use of Onboard Flightcrew Member Rest Facilities*, authorizing the use of specific onboard rest facilities.

| <b>Evaluation and Qualification Analysis</b> |   |            |           |
|--|---|------------|-----------|
| <b>Item No.</b>                              | <b>Item</b>   | <b>YES</b> | <b>NO</b> |
| 1.   | Is the rest facility physically located in an area other the economy section of the airplane? |            |           |
| 2.   | Is the rest facility properly placarded to designate it as a class 3 rest facility?           |            |           |
| 3.   | Does the seat recline at least 40 degrees?  |            |           |
| 4.   | Does the seat provide leg and foot support?   |            |           |
| 5.   | Does this rest facility meet the qualification specifications for a class 3 rest facility?    |            |           |
| <b>Item</b>                                  | <b>Comments and Remarks</b>   |            |           |



**VOLUME 6 SURVEILLANCE****CHAPTER 3 PART 125 INSPECTIONS****Section 4 Conduct Part 125 Base Inspection****6-1246 PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) ACTIVITY CODES AND AIR TRANSPORTATION OVERSIGHT SYSTEM (ATOS) ACTIVITIES.****A. Operations:**

- Initial Certification: 1353.
- Surveillance: 1616.

**B. Airworthiness:**

- Initial Certification: 3302.
- Surveillance: 3632.

**C. Avionics:**

- Initial Certification: 5302.
- Surveillance: 5632.

**D. ATOS Data Collection Tools (DCT).**

- Safety Attribute Inspection (SAI): To be determined (TBD).
- Element Performance Inspection (EPI): TBD.

**6-1247 GENERAL.** This section contains direction and guidance for operations, maintenance, and avionics inspectors to use for performing base of operations inspections and to ensure that the operator conforms to the regulatory requirements listed in Title 14 of the Code of Federal Regulations (14 CFR) part 125. Base facilities inspections are necessary to verify that the operator is accomplishing those support activities required to originate, turn around, or terminate a flight.

**6-1248 OVERVIEW.** Part 125, § 125.45 requires that each operator shall allow the Administrator, at any time or place, to make any inspections or tests to determine its compliance with Title 49 of the United States Code (49 U.S.C.) (formerly the Federal Aviation Act of 1958 (FA Act)), 14 CFR, its operating certificate and operations specifications (OpSpecs)/letter of authorization (LOA), or its Letter of Deviation Authority (LODA) to determine or its eligibility to continue to hold its certificate or its LODA.

**A. Definition of a Part 125 Operator.** A part 125 operator may be a part 125 certificate holder or a part 125, subpart A (A125) LODA holder. The A125 LODA provides relief from the requirements to hold a certificate and OpSpecs for noncommercial operators only. The A125 LODA assures the safety intent of the part 125 operating rule while granting certification

relief to corporate and private operators. A125 LODA holders are issued LOAs instead of OpSpecs.

**B. Base Inspection.** A base inspection is a scheduled activity that consists of a thorough review of the operator's operations, maintenance records, procedures, and aircraft. The frequency of base inspections will depend on the number of aircraft and personnel employed by the operator, complexity of areas of the authorized operation, and availability of qualified inspectors. Items such as complaints, enforcement action, and requests from certificate-holding district offices (CHDO) dictate the scheduling of surveillance of an operator. Occasionally, Federal Aviation Administration (FAA) headquarters (HQ) will identify special emphasis items.

**C. Conduct of Base Inspections (Operations).** The CHDO conducts base inspections of all part 125 operators. The district office having geographical jurisdiction over the base's location conducts base inspections of applicants for part 125 certificates.

**D. Conduct of Base Inspections (Airworthiness and Avionics).** Base facilities inspections are necessary to verify that the operator is maintaining the aircraft in an Airworthy condition and accomplishing the necessary maintenance support activities required to originate, turn around, or terminate a flight.

**6-1249 SPECIFIC INSPECTION PRACTICES AND PROCEDURES.** Inspectors should use the Base Inspection Job Aid (Figure 6-59) during the inspection. This job aid provides inspectors with "reminder" items to check when they evaluate and verify specific policies and procedures. The job aid may not include inspected areas. An inspector should record an inspected area as an "other" item in the respective subject area. Also, there may be items on the job aid that the inspector did not observe and should be left blank. The job aid is designed solely as a reminder and as a means of standardization to ensure that the inspectors conduct station facilities inspections in the same general manner. Inspectors should conduct station facilities inspections by using the procedures that follow.

#### **A. Responsibilities.**

1) The CHDO has the responsibility for planning and programming the surveillance and inspections of an operator within its geographical area of responsibility.

2) A district office is also responsible for assisting the CHDO in the conduct of surveillance of operators who are not based within, but who are observed to operate to or from the airports located within, the district office area.

a) When an operator's area of operation extends into other district offices' geographical area of responsibility, the CHDO will conduct inspection and surveillance with the procedures outlined in this section.

b) Requests for assistance from another district office within the same region will be made directly from district office to district office unless the regions direct otherwise.

3) Generally, the National Program Guidelines (NPG) determine the frequency of inspections; however, the number and frequency of inspections (surveillance) will vary depending on the need for emphasis and where and when more surveillance might be necessary.

**6-1250 BASE INSPECTION JOB AID.** The job aid in Figure 6-59, Part 125 Operations Base Inspection Job Aid, is for use in conducting the base inspection at the principal base of operations.

**A. Inspector Responsibilities.** The items in the job aid are those that aviation safety inspectors (ASI) generally perform during routine surveillance.

1) The far left column, “14 CFR §,” gives the regulation where objective standards are found.

2) For each item, the inspector marks one of the three columns on the right: “SAT” for satisfactory, “UNSAT” for unsatisfactory, or “N/A” for not applicable.

**B. Job Aid Explanation.** For those items that are not self-explanatory, use the following for objective standards:

1) **Section 125.31—Contents of Certificate and Operations Specifications.** Refer to the current edition of Advisory Circular (AC) 125-1, Operations of Large Airplanes Subject to Federal Aviation Regulation Part 125, Appendix 2, Operations Specifications, for recommended OpSpecs/LOAs.

2) **Section 125.43—Use of Operations Specifications.** Ensure that the manual contains applicable OpSpec parts.

3) **Section 125.73—Contents.** This area refers to the availability, currency, and content of the written guidance required by Federal regulations. The operator’s manuals must be available to each employee or contract maintenance provider for use in the performance of their assigned duties and contracted work.

4) **Section 125.75—Airplane Flight Manual.** The operator may combine this manual with the § 125.71 manual and revise it if approved by the Administrator.

5) **Part 125 Subpart D—Airplane Requirements.** The certificate holder must comply with part 125, §§ 125.91 and 125.93 prior to any aircraft operations.

6) **Section 125.207—Emergency Equipment Requirements.** If the first aid kit is sealed, visual inspection of contents is not required.

7) **Part 125 Subpart K—Flight Release Rules.** Review the flight release and load manifest forms for accuracy and each required item for completion. Cross-check the load manifest fuel with fuel required by the release form.

**6-1251 STATION FACILITIES INSPECTION REPORT.** Inspectors should use the Part 125 Operations Base Inspection Job Aid when recording the inspection in the PTRS and for updating the enhanced Vital Information Database (eVID) subsystem environmental file. Discrepancies observed during the inspection should be documented in the comment section along with any on-the-spot corrective action taken by the operator. Any recommended corrective actions should also be noted on the report so that the oversight principal inspectors (PI) will have the inspector's views concerning the most effective means of resolving the discrepancies. When applicable, the inspector should indicate an outstanding or above-average base facility on the report to provide an accurate picture of the operator's facility.

#### **6-1252 PREREQUISITES AND COORDINATION REQUIREMENTS.**

**A. Prerequisites.** This surveillance requires knowledge of regulatory requirements in part 125, FAA policies, and qualification as an ASI (Operations, Maintenance, and Avionics).

**B. Coordination.** This surveillance requires coordination with all the oversight inspection personnel within the CHDO and possibly the Regional Office (RO).

#### **6-1253 REFERENCES, FORMS, AND JOB AIDS.**

##### **A. References (current editions):**

- AC 125-1, Operations of Large Airplanes Subject to Federal Aviation Regulation Part 125.
- FAA Order 2150.3, FAA Compliance and Enforcement Program.

##### **B. Forms:**

- FAA Form 1360-33, Record of Visit, Conference, or Telephone Call.
- FAA Form 8000-36, Program Tracking and Reporting System Data Sheet.

##### **C. Job Aids:**

- Sample letters.
- Part 125 Operations Base Inspection Job Aid (Figure 6-59).
- Inspection Evaluation Report (Figure 6-61).

#### **6-1254 INSPECTION PROCEDURES.**

**A. Planning for the Inspection.** The inspector should carefully plan a base facilities inspection before conducting it. The inspector should review previous inspection reports, identify any areas of weakness previously reported, and review the operator's corrective actions. The inspector conducting the inspection should contact the appropriate PIs to determine if there are any specific areas that may currently need a review or in-depth inspection. The inspector should coordinate with the base manager ahead of time to establish a date and time for conducting the inspection (see Figure 6-60, Letter Notifying Operator of Base Inspection).

**B. Briefing for the Inspection.** Before beginning the inspection, the inspector should request that the base manager (or person in charge) provide an opening briefing on the facility operation, including its assigned personnel and operational procedures. In turn, the inspector should brief the base manager and the staff (if any) on the purpose and scope of the inspection. This discussion should include the following points:

- Purpose of the base facility inspection,
- Introduction of inspectors,
- The specific areas to be inspected, and
- The proposed time and place of the exit briefing.

1) **The Operating Certificate and OpSpecs/LOAs.** Determine if they are still relevant to the operator's scope of operation.

2) **Procedures and Policies.** Determine that any changes continue to show compliance with § 125.73 manual content.

3) **Letters of Deviation or Special Authorizations.** Determine if they are still appropriate to the operations being conducted.

4) **Surveillance Records and Previous Base Inspection Records.** Identify the areas of concern and the need for special emphasis.

5) **District Office File Material.** Any other material in the district office file.

**C. Job Aid.** Use the Part 125 Operations Base Inspection Job Aid to brief the operator and conduct the base inspection.

**D. Base Inspection Findings.** Use the Part 125 Operations Base Inspection Job Aid to determine the areas of noncompliance.

**E. Debrief The Operator.**

1) Advise the operator of any areas of noncompliance found during the inspection, indicating those areas that they need to correct before they can conduct any further operations.

2) Provide a copy of the discrepancies to the operator using Figure 6-61, Inspection Evaluation Report.

**F. Formal Notification.** Prepare a letter listing the discrepancies (see Figure 6-62, Letter Indicating Discrepancies Discovered During Base Inspection) for the PI's signature. Send the original to the operator and place a copy in the operator's district office file.

**G. File the Task Completion Records at District Office.** The surveillance completion records include the following:

- Part 125 Operations Base Inspection Job Aid,
- Inspection Evaluation Report,
- Copy of letter of discrepancies, and
- Documentation of discrepancies.

**H. Make Appropriate PTRS Entries.** Complete FAA Form 8000-36.

**6-1255 TASK OUTCOMES.** The completion of this surveillance results in one of the following:

- A letter listing any discrepancies,
- A completed Part 125 Operations Base Inspection Job Aid, or
- A completed Inspection Evaluation Report.

**6-1256 FUTURE ACTIVITIES.**

- Followup inspection to verify correction of discrepancies.
- Initiation of Enforcement Investigation Report (EIR).
- Programmed, routine surveillance and inspection.

**Figure 6-59. Part 125 Operations Base Inspection Job Aid**

| 14 CFR § | Inspect the following items:   | SAT | UNSAT | N/A |
|----------|--|-----|-------|-----|
| 125.3    | Deviation Authority  |     |       |     |
| 125.5    | Original Certificate and OpSpecs/LOAs  |     |       |     |
| 125.7    | True copy of certificate <i>in each airplane</i>   |     |       |     |
|          | True copy of letter of deviation, if issued  |     |       |     |
| 125.11   | Does not hold out to the public  |     |       |     |
| 125.25   | <p><b>Management Personnel</b></p> <p>1. Description of the duties, responsibilities, and authority of each of its management personnel in the general policy section of its manual.</p> <p>2. List in the manual the names and addresses of each of its management personnel.</p> <p><b>Director of Operations</b></p> <p>Name: _____</p> <p>Address: _____</p> <p>_____</p>  |     |       |     |
|          | <p><b>Designated Person (DP), responsible for the scheduling of inspections required by the manual and for the updating of the approved Weight and Balance (W&amp;B) system on all airplanes.</b></p> <p>Name: _____</p> <p>Address: _____</p> <p>3. A description of the maintenance organization must be in the operator’s manual when the operator has such an organization.</p> <p><b>Other Management Personnel (list)</b></p> <p>_____</p> <p>_____</p> <p>_____</p> |     |       |     |
| 125.31   | <p>Certificate contains—</p> <p>Holder’s name: _____</p>   |     |       |     |
|          | Date of Issue:   |     |       |     |
|          | <p>OpSpecs/LOAs contain—</p> <p>Kinds of operations authorized</p>   |     |       |     |

|                 |   |            |              |            |
|-----------------|---|------------|--------------|------------|
|                 | <b>Type of airplane and registration number authorized for use</b>  |            |              |            |
|                 | <b>Any additional items considered necessary when issued</b>  |            |              |            |
| <b>125.37</b>   | <b>Duty time limitations</b>  |            |              |            |
| <b>125.43</b>   | <b>Complete and separate set of OpSpecs/LOAs</b>  |            |              |            |
| <b>14 CFR §</b> | <b>POLICIES AND PROCEDURES</b>  | <b>SAT</b> | <b>UNSAT</b> | <b>N/A</b> |
| <b>125.71</b>   | <b>Manual</b>   |            |              |            |
|                 | <b>Copy at principal base of operations</b>   |            |              |            |
|                 | <b>Not contrary to 14 CFR or OpSpecs/LOAs</b>   |            |              |            |
|                 | <b>Appropriate portions available to ground and maintenance personnel</b>                                       |            |              |            |
|                 | <b>Copies provided to flightcrew</b>  |            |              |            |
| <b>125.73</b>   | <b>Manual contents</b>  |            |              |            |
|                 | <b>Date of last revision and number on each page</b>  |            |              |            |
|                 | <b>Management personnel names; assigned area of responsibility; and duties, responsibilities, and authority</b> |            |              |            |
|                 | <b>Procedures for ensuring compliance with airplane W&amp;B limitations</b>                                     |            |              |            |
|                 | <b>Copy of OpSpecs/LOAs or appropriate extracted material</b>   |            |              |            |
|                 | <b>Procedures for accident notification</b>   |            |              |            |
|                 | <b>Procedures for ensuring Required Inspection Items (RII) have been performed</b>                              |            |              |            |
|                 | <b>Procedure for reporting and recording mechanical irregularities (Service Difficulty Report (SDR))</b>        |            |              |            |
|                 | <b>Procedures to be followed to determine that irregularities have been corrected or deferred</b>               |            |              |            |
|                 | <b>Procedures for release or continuation of flight for required equipment breakdown</b>                        |            |              |            |
|                 | <b>Procedures for refueling</b>   |            |              |            |
|                 | <b>Procedures for pilot in command (PIC) in passenger briefing</b>  |            |              |            |

|   |  |            |              |            |
|---|--|------------|--------------|------------|
|   | <b>Flight locating procedures when no flight plan is filed</b>   |            |              |            |
|   | <b>Procedures for ensuring compliance with emergency procedures</b>  |            |              |            |
|   | <b>List of functions assigned required crewmembers during emergencies and emergency evacuation</b>   |            |              |            |
|   | <b>Approved airplane inspection program (Airworthiness)</b>  |            |              |            |
|   | <b>Hazardous materials (hazmat) procedures</b><br><b>Instructions to recognize hazmats</b>   |            |              |            |
|   | <b>If hazmats are handled, carried, or stored, procedures for:</b><br><b>Accepting for shipment proper documents, compatibility of articles, proper packing, marking, labeling, and instructions for loading and storage</b> |            |              |            |
|   | <b>Notification and reporting of incidents</b>   |            |              |            |
|   | <b>Notification of PIC when hazmats are onboard</b>  |            |              |            |
|   | <b>Procedures for the evacuation of persons who may need assistance from another person during an emergency</b>  |            |              |            |
|   | <b>Identity of each person who will give tests and the tests authorized</b>  |            |              |            |
|   | <b>Other procedures and policy instructions concerning the operation</b>   |            |              |            |
| <b>125.75</b>   | <b>Airplane Flight Manual (AFM)</b><br><b>Current approved manual or equivalent for each type airplane</b><br><b>Carried onboard each airplane</b>   |            |              |            |
| <b>14 CFR §</b>   | <b>SUBPART D—AIRPLANE REQUIREMENTS</b>   | <b>SAT</b> | <b>UNSAT</b> | <b>N/A</b> |
| <b>125.91</b>   | <b>Current airworthiness certificate</b><br><b>In an Airworthy condition (airworthiness)</b><br><b>Empty weight and center of gravity (CG) calculated from actual weighing within preceding 36 months</b>                    |            |              |            |
| <b>125.93</b>   | <b>Airplane limitations</b>  |            |              |            |
| <b>SUBPART E—SPECIAL AIRWORTHINESS REQUIREMENTS (AIRWORTHINESS)</b> |  |            |              |            |

| <b>14 CFR §</b> | <b>SUBPART F—INSTRUMENTS AND EQUIPMENT</b>  | <b>SAT</b> | <b>UNSAT</b> | <b>N/A</b> |
|-----------------|---|------------|--------------|------------|
| <b>125.201</b>  | <b>Instrument and equipment specifically or otherwise required by type certificate (TC) and essential for safe operation are in operating condition</b> |            |              |            |
|                 | <b>Instrument and equipment required by Airworthiness Directive (AD) are operable unless AD provides otherwise</b>                                      |            |              |            |
|                 | <b>Minimum equipment list (MEL) for airplane</b>  |            |              |            |
|                 | <b>MEL LOA from Flight Standards District Office (FSDO) (Supplemental Type Certificate (STC))</b>   |            |              |            |
|                 | <b>Airplane records available to PIC include entries describing inoperable instruments and equipment</b>  |            |              |            |
|                 | <b>Airplane operated under conditions of the MEL and current LOA if applicable</b>  |            |              |            |
| <b>125.203</b>  | <b>Radio and navigational equipment</b>   |            |              |            |
|                 | <b>Radio navigational equipment able to receive radio signals from ground facilities for visual flight rules (VFR) over-the-top</b>                     |            |              |            |
|                 | <b>Under instrument flight rules (IFR) or extended overwater, meets the requirements of § 125.203(c)</b>  |            |              |            |
| <b>125.205</b>  | <b>Equipment for airplanes operated under IFR meet requirements of § 125.205(a) through (k)</b>   |            |              |            |
| <b>125.206</b>  | <b>Pitot heat indication system complies with § 25.1326</b>   |            |              |            |
|                 | <b>Operator possesses extension of § 125.206 deadline</b>   |            |              |            |
| <b>125.207</b>  | <b>Emergency equipment</b>  |            |              |            |
|                 | <b>Airplanes with seating capacity of 20 or more have—</b>  |            |              |            |
|                 | <b>One approved first aid kit</b>   |            |              |            |
|                 | <b>Dust proof and moisture proof</b>  |            |              |            |
|                 | <b>Contains only materials approved by the Administrator or meeting Federal Specifications G GK-391a</b>  |            |              |            |
|                 | <b>Accessible to Flight Attendants (F/A)</b>  |            |              |            |
|                 | <b>At takeoff, contains the contents and quantity described in § 125.207(a)</b>   |            |              |            |

|                |   |  |  |  |
|----------------|---|--|--|--|
|                | <b>Crash axe accessible to crew but not accessible to passengers</b>  |  |  |  |
|                | <b>No smoking and safety belt signs that can be turned on and off by crewmember</b>                                   |  |  |  |
|                | <b>Additional emergency equipment in part 125, Appendix A</b>   |  |  |  |
|                | <b>Emergency equipment requirements per the current rule</b>  |  |  |  |
| <b>125.209</b> | <b>Emergency equipment for extended overwater operations</b>  |  |  |  |
|                | <b>An approved life preserver with a locator light for each passenger or</b>  |  |  |  |
|                | <b>Other than a life preserver, a flotation device which is removable</b>   |  |  |  |
|                | <b>Life rafts to carry all occupants</b>  |  |  |  |
|                | <b>Equipment onboard life rafts meets requirements of § 125.209(a)(2)(i) through (xix)</b>                            |  |  |  |
|                | <b>One life raft has a survival emergency locator transmitter (ELT) as per § 125.209(b)</b>                           |  |  |  |
| <b>125.211</b> | <b>Seat and safety belts</b>  |  |  |  |
|                | <b>An approved seat or berth for each person at least 2 years old</b>   |  |  |  |
|                | <b>Approved safety belt for separate use by each person at least 2 years old (Note exceptions in § 125.211(a)(2))</b> |  |  |  |
|                | <b>Complies with § 125.211(b)</b>   |  |  |  |
|                | <b>Sideward facing seats comply with § 25.785(c)</b>  |  |  |  |
|                | <b>Complies with § 125.211(d)</b>   |  |  |  |
|                | <b>Complies with § 125.211(e)</b>   |  |  |  |
| <b>125.213</b> | <b>Miscellaneous equipment</b>  |  |  |  |
|                | <b>Adequate number of spare fuses (number found in manual)</b>  |  |  |  |
|                | <b>Windshield wiper or equivalent at each pilot station</b>   |  |  |  |
|                | <b>Appropriate power supply and distribution system</b>   |  |  |  |
|                | <b>Flight instrument power indicator</b>  |  |  |  |
|                | <b>Two independent static pressure systems</b>  |  |  |  |

|                |  |  |  |  |
|----------------|--|--|--|--|
|                | <b>Doors leading to emergency exits placarded open during takeoff and landing</b>  |  |  |  |
|                | <b>Means for crew to unlock doors leading to passenger compartments</b>            |  |  |  |
| <b>125.215</b> | <b>Operating information required</b>  |  |  |  |
|                | <b>Cockpit checklists</b>  |  |  |  |
|                | <b>Before engine start</b>   |  |  |  |
|                | <b>Before takeoff</b>  |  |  |  |
|                | <b>Cruise</b>  |  |  |  |
|                | <b>Before landing</b>  |  |  |  |
|                | <b>After landing</b>   |  |  |  |
|                | <b>Stopping engines</b>  |  |  |  |
|                | <b>Emergency cockpit checklists</b>  |  |  |  |
|                | <b>Fuel, hydraulic, electrical, and mechanical systems</b>                         |  |  |  |
|                | <b>Emergency operation of instruments and controls</b>                             |  |  |  |
|                | <b>Engine out procedures</b>   |  |  |  |
|                | <b>Other emergency procedures</b>  |  |  |  |
|                | <b>Pertinent aeronautical charts</b>   |  |  |  |
|                | <b>For IFR flight—</b>   |  |  |  |
|                | <b>En route charts</b>   |  |  |  |
|                | <b>Terminal area charts</b>  |  |  |  |
|                | <b>Approach and letdown charts</b>   |  |  |  |
|                | <b>One-engine-inoperative (OEI) climb performance data, as per § 125.215(a)(5)</b> |  |  |  |
| <b>125.217</b> | <b>Passenger information</b>   |  |  |  |
|                | <b>Passenger information signs meet requirements of § 25.791</b>                   |  |  |  |
| <b>125.219</b> | <b>Passenger Medical Oxygen Use —complies with § 125.219(a) through (e)</b>        |  |  |  |

|  |   |            |              |            |
|--|---|------------|--------------|------------|
| 125.221                                      | <b>Icing conditions operating limitations</b>   |            |              |            |
|  | <b>Complies with § 125.221(a) through (d)</b>   |            |              |            |
| 125.223                                      | <b>Weather radar equipment requirements</b>   |            |              |            |
|  | <b>Weather radar installed</b>  |            |              |            |
|  | <b>Weather radar operating satisfactorily</b>   |            |              |            |
|  | <b>Manual procedures for inoperative radar</b>  |            |              |            |
| 125.226                                      | <b>A record of digital flight data recorder (DFDR) information does not need to be retained longer than 60 days (§ 125.226(h)).</b>   |            |              |            |
| 125.227(f)                                   | <b>In the event of an accident or occurrence requiring immediate notification of the National Transportation Safety Board (NTSB) under Title 49 of the Code of Federal Regulations (49 CFR) part 830, which results in the termination of the flight, the operator shall keep the recorded information for at least 60 days or if requested by the Administrator or the Board, for a longer period.</b> |            |              |            |
| <b>SUBPART G—MAINTENANCE (AIRWORTHINESS)</b> |   |            |              |            |
| <b>14 CFR §</b>                              | <b>SUBPART H—AIRMAN AND CREWMEMBER REQUIREMENTS</b>   | <b>SAT</b> | <b>UNSAT</b> | <b>N/A</b> |
| 125.261                                      | <b>Airman services limitations</b><br><b>All airman meet requirements of § 125.261(a)</b>   |            |              |            |
| 125.263                                      | <b>Airplanes operated with minimum flightcrew required by AFM</b>   |            |              |            |
|  | <b>Airplanes requiring Flight Engineers (FE)—</b><br><b>One flightcrew member qualified to act as FE in emergency</b>   |            |              |            |
| 125.265                                      | <b>FE requirements</b><br><b>FE crewmembers hold current FE certificate</b>   |            |              |            |
|  | <b>FE crewmembers meet the 50 hours in 6 months requirement</b>   |            |              |            |
| 125.267                                      | <b>Flight navigator and long-range navigation equipment</b><br><b>Operations outside 48 contiguous states and District of Columbia—</b><br><b>Has a flightcrew member with current flight navigator certificate or</b>  |            |              |            |

|                 |   |            |              |            |
|-----------------|---|------------|--------------|------------|
|                 | <b>Two independent approved means of long-range navigation</b>  |            |              |            |
|                 | <b>Operations requiring flight navigator or long-range navigation equipment indicated in OpSpecs/LOAs</b>               |            |              |            |
| <b>125.269</b>  | <b>F/As</b><br><b>Airplanes having more than 19 but less than 51 passengers have one F/A</b>                            |            |              |            |
|                 | <b>Airplanes having more than 50 but than less than 101 passengers have two F/As</b>                                    |            |              |            |
|                 | <b>Airplanes with more than 100 passengers have two F/As plus one additional F/A for every additional 50 passengers</b> |            |              |            |
|                 | <b>Number of F/As specified in OpSpecs/LOAs</b>   |            |              |            |
|                 | <b>Complies with § 125.269(c)</b>   |            |              |            |
| <b>125.271</b>  | <b>Emergency/emergency evacuation duties</b>  |            |              |            |
|                 | <b>Crewmembers assigned necessary functions</b>   |            |              |            |
|                 | <b>Functions described in manual</b>  |            |              |            |
| <b>14 CFR §</b> | <b>SUBPART I—FLIGHTCREW MEMBER REQUIREMENTS</b>   | <b>SAT</b> | <b>UNSAT</b> | <b>N/A</b> |
| <b>125.281</b>  | <b>Crewmembers used as PIC hold—</b><br><b>At least commercial certificate</b>  |            |              |            |
|                 | <b>Appropriate category, class, type rating</b>   |            |              |            |
|                 | <b>An instrument rating</b>   |            |              |            |
|                 | <b>PIC flight experience—</b><br><b>1,200 hours as pilot</b>  |            |              |            |
|                 | <b>500 hours of cross-country time</b>  |            |              |            |
|                 | <b>100 hours of nighttime</b>   |            |              |            |
|                 | <b>At least 10 night takeoffs and landings</b>  |            |              |            |
|                 | <b>75 hours actual or simulated instrument time, 50 hours of which was actual</b>                                       |            |              |            |
| <b>125.283</b>  | <b>Crewmembers used as second in command (SIC) hold—</b>  |            |              |            |

|                |   |  |  |  |
|----------------|---|--|--|--|
|                | <b>At least commercial certificate</b>  |  |  |  |
|                | <b>Appropriate category and class ratings</b>   |  |  |  |
|                | <b>An instrument rating</b>   |  |  |  |
|                | <b>For IFR flight meets recent instrument experience requirements for part 61</b>   |  |  |  |
| <b>125.285</b> | <b>Recent experience</b><br><b>Required pilot flightcrew members have at least three takeoffs and landings in type within the preceding 90 days</b> |  |  |  |
|                | <b>Crewmembers not meeting § 125.285(a) checked by a check airman</b>   |  |  |  |
|                | <b>Check airman certified crewmember proficiency and qualifications</b>   |  |  |  |
| <b>125.287</b> | <b>Pilot testing experience</b><br><b>Pilots passed 12-month written or oral test</b>   |  |  |  |
|                | <b>Pilots passed 12-month competency check</b>  |  |  |  |
|                | <b>Instrument proficiency check (IPC) substituted</b>   |  |  |  |
|                | <b>Check airman/inspector has certified the competency of each pilot</b>  |  |  |  |
| <b>125.289</b> | <b>F/A testing requirements</b>   |  |  |  |
|                | <b>F/As have completed 12-month test on subjects indicated in § 125.289 (a) through (h)</b>   |  |  |  |
| <b>125.291</b> | <b>PIC IPC</b><br><b>Pilots passed 6-month proficiency check</b>  |  |  |  |
|                | <b>Letters of competency for each type of precision approach</b>  |  |  |  |
|                | <b>Letters of competency for each type of non-precision approach or</b>   |  |  |  |
|                | <b>Any other two different types of non-precision approach</b>  |  |  |  |
|                | <b>Instrument approach procedures (IAP) include—</b><br><b>At least one straight-in approach</b>  |  |  |  |
|                | <b>At least one circling approach</b>   |  |  |  |

|                 |   |            |              |            |
|-----------------|---|------------|--------------|------------|
|                 | <b>At least one missed approach</b>   |            |              |            |
|                 | <b>Each approach conducted to published minimums</b>  |            |              |            |
|                 | <b>Instrument proficiency check consisted of—<br/>Oral or written equipment test</b>                            |            |              |            |
|                 | <b>Flight check under actual or simulated conditions</b>  |            |              |            |
|                 | <b>PIC checked in all types of airplane in rotation with not more than one flight check in a 6-month period</b> |            |              |            |
|                 | <b>Check airman issued letters of competency<br/>Lists types of instrument approaches</b>                       |            |              |            |
|                 | <b>Lists facilities authorized</b>  |            |              |            |
| <b>125.295</b>  | <b>Check airman authorization<br/>Check airman still employed</b>   |            |              |            |
|                 | <b>Test results certified by check airman</b>   |            |              |            |
| <b>125.297</b>  | <b>Approval of airplane simulators and training devices</b>   |            |              |            |
|                 | <b>Each simulator or training device—<br/>Specifically approved for—<br/>The operator</b>                       |            |              |            |
|                 | <b>The type of airplane and variation</b>   |            |              |            |
|                 | <b>The maneuvers, procedures, or crewmember functions involved</b>  |            |              |            |
|                 | <b>Maintains performance, functional, and other characteristics required for approval</b>                       |            |              |            |
|                 | <b>Modified to conform to any modification to the airplane</b>  |            |              |            |
| <b>14 CFR §</b> | <b>SUBPART K—FLIGHT RELEASE RULES</b>   | <b>SAT</b> | <b>UNSAT</b> | <b>N/A</b> |
| <b>125.351</b>  | <b>Flight release authority<br/>Flights started by person authorized to exercise operational control</b>        |            |              |            |
|                 | <b>Flight releases signed by PIC and person with operational control</b>  |            |              |            |
|                 | <b>Airplanes on ground more than 6 hours get new flight release</b>   |            |              |            |

|         |  |  |  |  |
|---------|--|--|--|--|
| 125.353 | <b>Facilities and services for additional available information</b>  |  |  |  |
| 125.355 | <b>Airplanes Airworthy when released</b>   |  |  |  |
| 125.357 | <b>Communication and navigation facilities on route or route segment equal to those required by § 125.363(a) through (d)</b>   |  |  |  |
| 125.365 | <b>Alternate airport for departure</b><br><b>Flight releases specify alternate airport distances from departure –</b><br><b>Airplanes with two engines, not more than 1 hour at normal cruise with OEI</b> |  |  |  |
|         | <b>Airplanes with three or more engines, not more than 2 hours at normal cruise with OEI</b>   |  |  |  |
|         | <b>Alternate airports meet requirements of OpSpecs/LOAs</b>  |  |  |  |
|         | <b>Alternate airports listed on flight release</b>   |  |  |  |
| 125.367 | <b>Alternate airport for destination (IFR or over-the-top)</b>   |  |  |  |
|         | <b>At least one alternate listed for each destination airport in flight release</b>  |  |  |  |
|         | <b>Flights released with alternates listed</b>   |  |  |  |
| 125.375 | <b>Fuel supply for non-turbine and turboprop airplanes complies with § 125.375(a) through (c)</b>  |  |  |  |
| 125.377 | <b>Fuel supply for turbine powered airplanes</b><br><b>Complies with § 125.377(a) through (d)</b>  |  |  |  |
| 125.379 | <b>Landing minimums for IFR</b><br><b>Minimum descent altitude (MDA) or decision height (DH) and visibility in OpSpecs/LOAs increased by 100 feet and ½ mile for pilots with 100 hours as PIC in type</b>  |  |  |  |
|         | <b>Substitutions for 100 hours PIC</b>   |  |  |  |
| 125.381 | <b>Takeoff and landing minimums for IFR</b><br><b>Complies with § 125.381(a) through (c)</b>   |  |  |  |
| 125.383 | <b>Load manifests</b><br><b>Load manifests prepared before each takeoff and include—</b><br><b>Number of passengers</b>  |  |  |  |

|                 |   |            |              |            |
|-----------------|---|------------|--------------|------------|
|                 | <b>Total weight of loaded airplane</b>  |            |              |            |
|                 | <b>Maximum allowable takeoff and landing weight</b>   |            |              |            |
|                 | <b>CG limits</b>  |            |              |            |
|                 | <b>CG or loaded according to loading schedule</b>   |            |              |            |
|                 | <b>Registration number of airplane</b>  |            |              |            |
|                 | <b>Origin and destination</b>   |            |              |            |
|                 | <b>Names of passengers</b>  |            |              |            |
|                 | <b>Load manifest carried by PIC in airplane</b>   |            |              |            |
|                 | <b>Copies of load manifests kept for 30 days</b>  |            |              |            |
| <b>14 CFR §</b> | <b>SUBPART L—RECORDS AND REPORTS</b>  | <b>SAT</b> | <b>UNSAT</b> | <b>N/A</b> |
| <b>125.401</b>  | <b>Crewmember records</b>   |            |              |            |
|                 | <b>Current records for each crewmember that show compliance with requirements of part 125</b> |            |              |            |
|                 | <b>Record of release from employment (kept for 6 months)</b>                                  |            |              |            |
|                 | <b>Record of physical or professional disqualification (kept for 6 months)</b>                |            |              |            |
|                 | <b>Records kept at principal base of operations or where authorized by Administrator</b>      |            |              |            |
|                 | <b>Computer record system (if used)</b>   |            |              |            |
| <b>125.403</b>  | <b>Flight release contains at least—</b>  |            |              |            |
|                 | <b>Company or organization name</b>   |            |              |            |
|                 | <b>Make, model, and registration number of airplane used</b>                                  |            |              |            |
|                 | <b>Date of flight</b>   |            |              |            |
|                 | <b>Name and duty assignment of each crewmember</b>  |            |              |            |
|                 | <b>Departure airport, destination airports, alternate airports, and route</b>                 |            |              |            |
|                 | <b>Minimum fuel supply (lbs. or gal.)</b>   |            |              |            |

|                                  |   |                                |  |  |
|----------------------------------|---|--------------------------------|--|--|
|                                  | <b>Statement of type of operation (IFR or VFR)</b>  |                                |  |  |
|                                  | <b>Weather reports, forecasts, or combination attached to each release</b>  |                                |  |  |
| <b>125.405</b>                   | <b>Disposition of load manifest, flight release, and flight plans complies with § 125.405(a) through (e) (kept for 30 days)</b>   |                                |  |  |
| <b>125.411</b>                   | <p><b>Airworthiness release or maintenance record entry.</b></p> <p>A. Verify that each PIC reports all mechanical irregularities occurring during flight, and that they are entered in the maintenance log of the airplane at the next place of landing.</p> <p>B. Verify before each flight, that the PIC ascertains the status of each irregularity entered in the log at the end of the preceding flight.</p> <p>C. Verify that each person who takes corrective action or defers action concerning a reported or observed failure or malfunction of an airframe, aircraft engine, propeller, or appliance shall record the action taken in the airplane maintenance log in accordance with part 43 of this chapter.</p> <p>D. Verify that the procedures for keeping copies of the airplane maintenance logs in the airplane are working.</p> <p>E. When an Airworthiness Release Form is prepared, the operator must give a copy to the PIC and keep a record of it for at least 60 days.</p> |                                |  |  |
| <b>NOTE</b>                      | <b>This inspection must be entered into the PTRS.</b>   |                                |  |  |
|                                  |   |                                |  |  |
|                                  |   |                                |  |  |
|                                  |   |                                |  |  |
|                                  |   |                                |  |  |
| <b>REMARKS:</b>                  |   |                                |  |  |
| <br><br><br><br><br>             |   |                                |  |  |
| <b>INSPECTOR'S SIGNATURE:</b>    |   | <b>DATE:</b>                   |  |  |
| <br>                             |   | <br>                           |  |  |
| <b>INSPECTOR'S ORGANIZATION:</b> |   | <b>LOCATION OF INSPECTION:</b> |  |  |
| <br>                             |   | <br>                           |  |  |

**Figure 6-60. Letter Notifying Operator of Base Inspection**

FAA letterhead

[Operator's name and address]

Dear [operator's name]:

This is to inform you that inspectors from this office will be conducting an inspection of your 14 CFR part 125 principal base of operations on [date] at [time].

Enclosed is a job aid our inspectors will likely be using to conduct the inspection. If you have any questions, please contact this office at [telephone number].

[Principal Operations Inspector's (POI) signature]

**Figure 6-61. Inspection Evaluation Report**

|  |                           |                    |
|--|---------------------------|--------------------|
| <b>1. NAME OF ORGANIZATION</b>   | <b>2. CERTIFICATE NO.</b> | <b>3. LOCATION</b> |
| <p><b>4. AREA OR FUNCTION EVALUATED</b></p><br><p><b>5. 14 CFR SECTION AND/OR OTHER CONTROLLING DATA</b></p><br><p><b>6. REQUIREMENT OF 14 CFR (EXPLAIN)</b></p><br><p><b>7. FINDING (EXPLAIN NONCOMPLIANCE—WHAT, HOW, WHEN, AND WHERE)</b></p><br><p><b>8. DOCUMENTATION SUBSTANTIATING NONCOMPLIANCE (ATTACH COPY)</b></p> <p>1. _____</p> <p>2. _____</p> <p>3. _____</p> <p>4. _____</p> |                           |                    |
| <p><b>9. INSPECTOR'S SIGNATURE AND TITLE</b></p> <p>_____</p> <p><b>DATE:</b> _____</p>  |                           |                    |

**Figure 6-62. Letter Indicating Discrepancies Discovered During Base Inspection**

[Operator's name and address]

Dear [operator's name]:

This letter is formal notification of the results of a Base Inspection conducted by personnel of this office on [inspection date] and discussed with you on that date.

The following discrepancies were found and must be corrected:

1. The manual does not contain procedures for ensuring compliance with airplane Weight and Balance (W&B) limitations as required by 14 CFR part 125, § 125.73(b).
2. Crewmember flight time records required by 14 CFR part 124, § 124.401(a) were not completed for [personnel's names].

The above discrepancies must be corrected not later than 10 days from receipt of this letter. If the discrepancies are corrected prior to the 10 days, please notify this office.

Sincerely,

[Principal Operations Inspector's (POI) signature]

**RESERVED.** Paragraphs 6-1257 through 6-1270.

**VOLUME 6 SURVEILLANCE****CHAPTER 6 PART 137 INSPECTIONS****Section 2 Surveillance of a Part 137 Dispensing Operation****6-1476 PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) ACTIVITY CODE. 1623.**

**6-1477 OBJECTIVE.** The objective of this task is to determine that a private or commercial Title 14 of the Code of Federal Regulations (14 CFR) part 137 operator conducts a dispensing operation according to 14 CFR and the operating certificate. Successful completion of this task results in an indication of satisfactory or unsatisfactory in the operator's district office file.

**6-1478 GENERAL.** The need to inspect an operator's dispensing operation, which is the actual dispersal of chemicals on a specified area, may be a result of programmed surveillance. The inspection may be a response to a complaint about an operator (see Volume 7, Chapter 5). The inspector must consider the type of operation, whether a congested area is involved (which would include Volume 6, Chapter 6, Section 4), whether the operation is in daytime or nighttime, etc.

**6-1479 INSPECTOR SAFETY CONSIDERATIONS.** The nature of agricultural chemicals is that they may be toxic. Inspectors must take every precaution to ensure they are not contaminated by exposure or spillage. (See Volume 3, Chapter 52, Section 1.)

**6-1480 PREREQUISITES AND COORDINATION REQUIREMENTS.**

**A. Prerequisites.** This task requires knowledge of the regulatory requirements of part 137 and Federal Aviation Administration (FAA) policies and qualification as an aviation safety inspector (ASI) (Operations).

**B. Coordination.** This task may require coordination with the airworthiness unit.

**6-1481 REFERENCES, FORMS, AND JOB AIDS.****A. References:**

- Title 14 CFR parts 1, 61, 91, and 137.
- PTRS Procedures Manual (PPM).

**B. Forms:**

- FAA Form 1360-33, Record of Visit, Conference, or Telephone Call.
- FAA Form 8000-36, Program Tracking and Reporting Subsystem Data Sheet.

**C. Job Aids:**

- Figure 6-74, Dispensing Operation Inspection Job Aid.
- Figure 6-75, Agricultural Pilot Inspection Job Aid.
- Figure 6-76, Agricultural Aircraft Inspection Job Aid.
- Sample letters and figures.

**6-1482 PROCEDURES.**

**A. Schedule Inspection.** Coordinating with airworthiness, schedule a date and time for the inspection. Decide whether this inspection will be done with or without notice to the operator.

1) If the inspection is to be conducted with notice to the operator, notify the operator by telephone or in writing.

a) If the operator is notified by telephone, record the results on FAA Form 1360-33 and place it in the operator's file.

b) If the operator is notified in writing or the telephone call is confirmed in writing, use Figure 6-73, Letter to Operator Confirming Date, Time, and Location of Dispensing Inspection.

c) Review the district office file on the operator.

2) If the inspection is to be conducted without notice to the operator, review the district office file on the operator.

**B. Review Operator's File.** Check the district office's file on the operator for previous violations, complaints, accidents, incidents, and other inspection reports. Note any areas that require special attention.

**C. PTRS.** Enter the appropriate PTRS code to open the task.

**D. Job Aids.** Use Figures 6-74, 6-75, and 6-76 during the inspection.

1) If a private operator, determine if the operator meets the requirements of part 137, § 137.19(b), (d), and (e).

2) If a commercial operator, determine if the operator meets the requirements of § 137.19(c), (d), and (e).

3) Determine if the operator has current copies of parts 91 and 137 (recommended, but not required).

4) Determine if the operator knows the location of the nearest poison control center (recommended, but not required).

- 5) Determine if the aircraft is Airworthy and appropriately equipped (airworthiness).
- 6) Determine if the pilots are appropriately certificated (§§ 137.19 and 137.41).
- 7) If a private operator, determine if the operator complies with appropriate limitations (§ 137.35).
- 8) Determine if the operator has a record of informing all (appropriate) personnel of their duties and responsibilities (§ 137.41(a)).
- 9) Determine that the chief supervisor meets knowledge and skill requirements (§ 137.19(e)).
- 10) Determine that the pilot in command (PIC) is appropriately certificated for the operation (§ 137.41(c)).
- 11) Determine that appropriate competency letters or logbook endorsements have been issued (§ 137.19).
- 12) Determine that the operating name is the same as the name on the certificate. Companies operating with a “doing business as” (DBA) should also have this listed on their operating certificate (§ 137.55).
- 13) Determine that the operator’s address is the same as the one on file.

**E. Inspection Satisfactory.** If the inspection is satisfactory, note the outcome on the job aid.

**F. Inspection Unsatisfactory.**

1) If the inspection is unsatisfactory, note the outcome on the job aid. If the unsatisfactory items involve a safety hazard, terminate the operation immediately in accordance with the method worked out with the operator.

2) Note the unsatisfactory items on the job aid. Confirm, in writing, those items with the operator (Figure 6-77, Letter to Operation Confirming Unsatisfactory Items).

3) Initiate an enforcement investigation, as appropriate.

**G. Debrief Operator.**

1) Compliment the operator on all areas where the operator met or exceeded the standards.

2) Discuss any unsatisfactory items and how to improve them.

3) Discuss any unsatisfactory items, which may require an Enforcement Investigative Report (EIR) and the normal enforcement action process, if applicable.

**H. Inspection Reports.** Place the job aid, any reports, and correspondence in the district office file on the operator.

**I. PTRS.** Make the appropriate PTRS work entries for:

- Surveillance inspection,
- Any open items, and
- Enforcement action.

**J. Airworthiness Deficiencies.** If airworthiness deficiencies exist and an Airworthiness inspector was not present, notify the airworthiness unit supervisor.

**K. Other District Office Information.** If applicable, mail a copy of the inspection report and other documentation to the operator's certificate-holding district office (CHDO).

**6-1483 TASK OUTCOMES.** Completion of this task results in either of the following:

- Placing an indication that the inspection was satisfactory in the district office file on the operator, or
- Placing an indication that the inspection was unsatisfactory in the district office file on the operator.

**6-1484 FUTURE ACTIVITIES.**

- Depending upon the results of the inspection, schedule another inspection either at the programmed interval or earlier.
- Follow up on any open items.
- Possible initiation of an enforcement investigation if the inspection was unsatisfactory.

**Figure 6-73. Letter to Operator Confirming Date, Time, and Location of Dispensing Inspection**

[*FAA Letterhead*]

[*Date*]

[*Operator's name and address*]

Dear [*operator's name*]:

This letter is to confirm our telephone conversation on [*date*] to the effect that an inspection of your operations will be conducted on [*date of proposed inspection*]. Enclosed is a copy of the inspection aid that will be used to assist in determining whether this operation is in compliance with Title 14 of the Code of Federal Regulations (14 CFR) part 137.

Should you have any questions concerning this inspection or will not be available on the above date, please notify this office at [*telephone number*].

Sincerely,

[*Principal operations inspector's (POI) signature*]

**Figure 6-74. Dispensing Operation Inspection Job Aid**

| NAME AND ADDRESS OF OPERATOR  | CERTIFICATE NUMBER  | DATE OF INSPECTION |       |     |
|---|---|--------------------|-------|-----|
| LOCATION OF INSPECTION  | INSPECTORS  |                    |       |     |
| ITEM INSPECTED  | 14 CFR REF  | SAT                | UNSAT | N/A |
| 1. Private operator meets appropriate requirements.   | Part 137, § 137.19(b), (d), and (e)   |                    |       |     |
| 2. Commercial operator meets appropriate requirements.  | § 137.19(c), (d), and (e)   |                    |       |     |
| 3. Operator has copies of 14 CFR parts 91 and 137 (recommended).                                      | Not required  |                    |       |     |
| 4. Nearest poison control center location known (recommended).  | Not required  |                    |       |     |
| 5. Aircraft inspection.   | § 137.53(c) or § 91.405   |                    |       |     |
| 6. Restricted aircraft operating limitations.   | § 91.313  |                    |       |     |
| 7. Weight placard on hopper.  | Refer to TCDS and/or AFM for requirements. CAM 8.10-4 and CAM 8 Appendix B, § .63.  |                    |       |     |
| 8. Airman Certificates and pilot qualifications.  | §§ 137.19 and 137.41  |                    |       |     |
| 9. Aircraft equipped for dispensing.  | §§ 137.19(d) and 137.31(a)  |                    |       |     |
| 10. Shoulder harness.   | §§ 137.31(b) and 137.42   |                    |       |     |
| 11. Helmet – Department of Transportation (DOT)/Military Specifications (MIL-SPEC) (may be required). | May be required. Check TCDS and placards.   |                    |       |     |
| 12. Facsimile of part 137 operating certificate on board each aircraft used.                          | § 137.33(a)   |                    |       |     |
| 13. Airworthiness and registration certificates inspected.  | § 137.33; Not required to be carried on board the aircraft for part 137 operations. |                    |       |     |

**Figure 6-74. Dispensing Operation Inspection Job Aid (Continued)**

|  |              |  |  |  |
|--|--------------|--|--|--|
| 14. Private operator complies with limitations.                      | § 137.35     |  |  |  |
| 15. All personnel aware of duties and responsibilities.              | § 137.41(a)  |  |  |  |
| 16. Supervisors meet knowledge and skill requirements.               | § 137.19(e)  |  |  |  |
| 17. Pilot in command (PIC) appropriately certificated for operation. | § 137.41(c)  |  |  |  |
| 18. Pilots have competency letters or logbook endorsements.          | § 137.19     |  |  |  |
| 19. Operating name same as business name.                            | § 137.55     |  |  |  |
| 20. Pilots meet knowledge and skill requirements.                    | § 137.19(e)  |  |  |  |
| 21. Operator's address same as on file.                              | Not required |  |  |  |
| 22. Date of baseline cholinesterase tests:                           |              |  |  |  |
| a. Pilots  |              |  |  |  |
| b. Other personnel   |              |  |  |  |
| 23. Other items.   |              |  |  |  |
| <b>Remarks:</b>  |              |  |  |  |



**Figure 6-76. Agricultural Aircraft Inspection Job Aid**

| OPERATOR _____   |   |     |       |     |
|--|---|-----|-------|-----|
| DATE _____   |   |     |       |     |
| LOCATION OF INSPECTION _____ INSPECTOR _____                           |   |     |       |     |
| N- _____ MAKE _____ MODEL _____  |   |     |       |     |
| SERIAL NO. _____   |   |     |       |     |
| TOTAL TIME _____ ENGINE MODEL _____                                    |   |     |       |     |
| PROP MODEL _____   |   |     |       |     |
| ITEMS INSPECTED  | 14 CFR REF  | SAT | UNSAT | N/A |
| 1. Annual inspection<br>Date _____ Time _____                          | Part 137, § 137.53(c)<br>or part 91,<br>§ 91.409(a)               |     |       |     |
| 2. 100-hour inspection<br>Date _____ Time _____                        | Required for<br>congested area<br>operations.                     |     |       |     |
| 3. Airworthiness certificate   | § 137.33(b)   |     |       |     |
| 4. Aircraft registration   | § 137.33(b)   |     |       |     |
| 5. Agricultural Aircraft Operator Certificate<br>facsimile in aircraft | § 137.33(a)   |     |       |     |
| 6. Placards, hopper maximum weight                                     | CAM 8.10-4(b)(1)(i)   |     |       |     |
| 7. Placards, restricted category aircraft                              | Refer to<br>CAR/CAM 8, TCDS,<br>AFM, and ICA for<br>requirements. |     |       |     |
| 8. Shoulder harness  | § 137.31(b)   |     |       |     |
| 9. Compliance with Airworthiness<br>Directives (AD)                    | Parts 43 and 91   |     |       |     |
| 10. Airspeed indicator   | Part 21, § 21.25,<br>CAM 8 Appendix B,<br>§ .51(a)                |     |       |     |

**Figure 6-76. Agricultural Aircraft Inspection Job Aid (Continued)**

|   |                               |  |  |  |
|---|-------------------------------|--|--|--|
| 11. Carburetor air heat   | CAM 8 Appendix A,<br>§ 8.5(c) |  |  |  |
| 12. FAA Form 337, Major Repair and Alteration (Airframe, Powerplant, Propeller, or Appliance), for all major repairs, alterations, and Supplemental Type Certificates (STC) | Part 43 Appendix B            |  |  |  |
| 13. Other:  |                               |  |  |  |

**Figure 6-77. Letter to Operator Confirming Unsatisfactory Items**

[*FAA Letterhead*]

[*Date*]

[*Operator's name and address*]

Dear [*operator's name*]:

This letter is to confirm those items that were unsatisfactory at the dispensing inspection conducted at [*location*] on [*date*] and the present status of those items:

[*The inspector should list each item and indicate:*

- *Whether sufficient corrective action has been taken by the operator;*
- *That enforcement action may be initiated if no corrective action is taken by the operator; and*
- *If a followup inspection is required to determine if corrective action has been completed, and when that inspection will take place.]*

Sincerely,

[*Principal operations inspector's (POI) signature*]

**RESERVED.** Paragraphs 6-1485 through 6-1500.

**VOLUME 6 SURVEILLANCE****CHAPTER 6 PART 137 INSPECTIONS****Section 3 Surveillance of a Part 137 Satellite Site/Facility****6-1501 PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) ACTIVITY CODE. 1635.**

**6-1502 OBJECTIVE.** The objective of this task is to determine that agricultural aircraft operations conducted at a satellite site conform to Title 14 of the Code of Federal Regulations (14 CFR) and the operator's certificate. Successful completion of this task results in an indication of satisfactory or unsatisfactory in the district office file on the operator.

**6-1503 GENERAL.**

**A. Definition.** A satellite site is any job site other than the main base of operations; for example, a dirt strip, a field, or a seldom used job site.

**B. Need for Satellite Site Inspection.** The need to inspect an operator's satellite site may be a result of programmed surveillance. The inspection may also be in response to a complaint about an operator (see Volume 7, Chapter 5).

**6-1504 INSPECTOR SAFETY CONSIDERATIONS.** The nature of agricultural chemicals is that they may be toxic. Inspectors must take every precaution to ensure that they are not contaminated by exposure or spillage. (See Volume 3, Chapter 52, Section 1.)

**6-1505 PREREQUISITES AND COORDINATION REQUIREMENTS.**

**A. Prerequisites.** This task requires knowledge of the regulatory requirements of 14 CFR part 137 and Federal Aviation Administration (FAA) policies and qualifications as aviation safety inspector (ASI) (Operations).

**B. Coordination.** This task may require coordination with the airworthiness unit.

**6-1506 REFERENCES, FORMS, AND JOB AIDS.****A. References:**

- Title 14 CFR parts 1, 61, 91, and 137.
- PTRS Procedures Manual (PPM).

**B. Forms:**

- FAA Form 1360-33, Record of Visit, Conference, or Telephone Call.
- FAA Form 8000-36, Program Tracking and Reporting Subsystem Data Sheet.

**C. Job Aids:**

- Figure 6-79, Satellite Site Inspection Job Aid.
- Figure 6-80, Agricultural Pilot Inspection Job Aid.
- Figure 6-81, Agricultural Aircraft Inspection Job Aid.
- Sample letters and figures.

**6-1507 PROCEDURES.**

**A. Schedule Inspection.** Coordinating with airworthiness, schedule a date and time for the inspection. Decide whether this inspection will be done with or without notice to the operator.

1) If the inspection is to be conducted with notice to the operator, notify the operator by telephone or in writing.

a) If the operator is notified by telephone, record the results on FAA Form 1360-33 and place it in the operator's file.

b) If the operator is notified in writing or the telephone call is confirmed in writing, see Figure 6-78, Letter Confirming Date, Time, and Location of Satellite Site Inspection.

c) Review the operator's district office file.

2) If the inspection is to be conducted without notice to the operator, review the district office file on the operator.

**B. Review Operator's File.** Check the district office file on the operator for previous violations, complaints, accidents, incidents, and other inspection reports. Note any areas that require special scrutiny.

**C. PTRS.** Enter the appropriate PTRS code to open the task.

**D. Job Aids.** Use Figures 6-79, 6-80, and 6-81 during the inspection.

**E. Regulatory Considerations.** Observe operations at the satellite site for compliance with the appropriate sections of part 137 subparts B, C, and D.

**F. Inspection Satisfactory.** If the inspection is satisfactory, note the outcome on the job aid.

**G. Inspection Unsatisfactory.**

1) If the inspection is unsatisfactory, note the unsatisfactory items on the job aid. Confirm them in writing with the operator (Figure 6-82, Letter Confirming Any Unsatisfactory Items).

2) Initiate an enforcement investigation, as appropriate.

**H. Debrief Operator.**

- 1) Compliment the operator on all satisfactory items or areas where compliance standards were exceeded (e.g., company policy requires use of crash helmets).
- 2) Discuss any unsatisfactory items and how to improve them.
- 3) Discuss any unsatisfactory items that may require an Enforcement Investigative Report (EIR) and the normal enforcement action process, if applicable.

**I. Inspection Reports.** Place the job aid, any reports, and correspondences in the district office file on the operator.

**J. PTRS.** Make the appropriate PTRS work entries for:

- Surveillance/inspection,
- Any open items, and
- Enforcement action.

**K. Airworthiness Deficiencies.** If airworthiness deficiencies exist and an airworthiness inspector was not present, notify the principal airworthiness inspector or the airworthiness unit supervisor.

**L. Other District Office Information.** If applicable, mail a copy of the inspection report and other documentation to the operator's certificate-holding district office (CHDO).

**6-1508 TASK OUTCOMES.** Completion of this task results in either:

- Placing an indication in the district office file on the operator that the inspection was satisfactory, or
- Placing an indication in the district office file on the operator that the inspection was unsatisfactory.

**6-1509 FUTURE ACTIVITIES.**

- Depending upon the outcome of the inspection, schedule the next inspection as programmed or earlier, as necessary.
- Follow up on open items.
- Possible enforcement investigation if the inspection revealed a violation of 14 CFR or the conditions of the operating certificate.

**Figure 6-78. Letter Confirming Date, Time, and Location of Satellite Site Inspection**

[*FAA Letterhead*]

[*Date*]

[*Operator's name and address*]

Dear [*operator's name*]:

This letter is to confirm our telephone conversation on [*date*] to the effect that an inspection of your operations will be conducted at [*location*] on [*date of proposed inspection*]. Enclosed is a copy of the inspection aid that will be used to assist in determining whether this operation is in compliance with Title 14 of the Code of Federal Regulations (14 CFR) part 137.

Should you have any questions concerning this inspection or will not be available on the above date, please notify this office at [*telephone number*].

Sincerely,

[*Principal operations inspector's (POI) signature*]

**Figure 6-79. Satellite Site Inspection Job Aid**

| NAME AND ADDRESS OF OPERATOR  | CERTIFICATE NUMBER  | DATE OF INSPECTION |       |     |
|---|---|--------------------|-------|-----|
| LOCATION OF INSPECTION  | INSPECTORS  |                    |       |     |
| ITEM INSPECTED  | 14 CFR REF  | SAT                | UNSAT | N/A |
| 1. Private operator meets appropriate requirements.   | Part 137,<br>§ 137.19(b), (d),<br>and (e)   |                    |       |     |
| 2. Commercial operator meets appropriate requirements.  | § 137.19(c), (d),<br>and (e)  |                    |       |     |
| 3. Operator has copies of 14 CFR parts 91 and 137 (recommended).                                      | Not required  |                    |       |     |
| 4. Location of nearest poison control center known (recommended).                                     | Not required  |                    |       |     |
| 5. Aircraft inspection.   | § 137.53(c) or<br>§ 91.405  |                    |       |     |
| 6. Restricted aircraft operating limitations.   | § 91.313  |                    |       |     |
| 7. Weight placard on hopper.  | Not required  |                    |       |     |
| 8. Airman Certificates and pilot qualifications.  | §§ 137.19 and<br>137.41   |                    |       |     |
| 9. Aircraft equipped for dispensing.  | §§ 137.19(d) and<br>137.31(a)   |                    |       |     |
| 10. Shoulder harness.   | §§ 137.31(b), and<br>137.42   |                    |       |     |
| 11. Helmet – Department of Transportation (DOT)/Military Specifications (MIL-SPEC) (may be required). | Check<br>TCDS/placards, or<br>AFM/RFM as some<br>aircraft require use,<br>e.g., AT-602/802<br>Series. |                    |       |     |
| 12. Agricultural Aircraft Operator Certificate facsimile in aircraft.                                 | § 137.33(a)   |                    |       |     |
| 13. Airworthiness and registration certificates inspected.  | § 137.33  |                    |       |     |
| 14. Private operator complies with limitations.   | § 137.35  |                    |       |     |
| 15. All personnel aware of duties and responsibilities.   | § 137.41(a)   |                    |       |     |
| 16. Supervisors meet knowledge and skill requirements.  | § 137.19(e)   |                    |       |     |
| 17. Pilot in command (PIC) appropriately certificated for operation.                                  | § 137.41(c)   |                    |       |     |

**Figure 6-79. Satellite Site Inspection Job Aid (Continued)**

|   |              |  |  |  |
|---|--------------|--|--|--|
| 18. Pilots have competency letters or logbook endorsements. | § 137.19     |  |  |  |
| 19. Operating name same as business name.                   | § 137.55     |  |  |  |
| 20. Pilots meet knowledge and skill requirements.           | § 137.19(e)  |  |  |  |
| 21. Operator's address same as on file.                     | Not required |  |  |  |
| 22. Date of baseline cholinesterase tests:                  |              |  |  |  |
| a. Pilots.  |              |  |  |  |
| b. Other personnel.   |              |  |  |  |
| 23. Other items.  |              |  |  |  |
| <b>Remarks:</b>   |              |  |  |  |
|   |              |  |  |  |
|   |              |  |  |  |
|   |              |  |  |  |
|   |              |  |  |  |



**Figure 6-81. Agricultural Aircraft Inspection Job Aid**

| OPERATOR _____   |  |     |       |     |
|--|--|-----|-------|-----|
| DATE _____   |  |     |       |     |
| LOCATION OF INSPECTION _____ INSPECTOR _____                           |  |     |       |     |
| N- _____ MAKE _____ MODEL _____  |  |     |       |     |
| SERIAL NO. _____   |  |     |       |     |
| TOTAL TIME _____ ENGINE MODEL _____                                    |  |     |       |     |
| PROP MODEL _____   |  |     |       |     |
| ITEMS INSPECTED  | 14 CFR REF   | SAT | UNSAT | N/A |
| 1. Annual inspection<br>Date _____ Time _____                          | Part 137,<br>§ 137.53(c) or<br>part 91,<br>§ 91.409(a)               |     |       |     |
| 2. 100-hour inspection<br>Date _____ Time _____                        | Required for<br>congested area<br>operations.                        |     |       |     |
| 3. Airworthiness certificate   | § 137.33(b)  |     |       |     |
| 4. Aircraft registration   | § 137.33(b)  |     |       |     |
| 5. Agricultural Aircraft Operator Certificate<br>facsimile in aircraft | § 137.33(a)  |     |       |     |
| 6. Placards, hopper maximum weight                                     | CAM<br>8.10-4(b)(1)(i)   |     |       |     |
| 7. Placards, restricted category aircraft                              | Refer to<br>CAR/CAM 8,<br>TCDS, AFM,<br>and ICA for<br>requirements. |     |       |     |
| 8. Shoulder harness  | § 137.31(b)  |     |       |     |
| 9. Compliance with Airworthiness<br>Directives (AD)                    | Parts 43 and 91  |     |       |     |
| 10. Airspeed indicator   | Part 21, § 21.25<br>and CAM 8<br>Appendix B,<br>§ .51(a)             |     |       |     |
| 11. Carburetor air heat  | CAM 8<br>Appendix A,<br>§ 8.5(c)                                     |     |       |     |

**Figure 6-81. Agricultural Aircraft Inspection Job Aid (Continued)**

|   |                    |  |  |  |
|---|--------------------|--|--|--|
| 12. FAA Form 337, Major Repair and Alteration (Airframe, Powerplant, Propeller, or Appliance), for all major repairs, alterations, and Supplemental Type Certificates (STC) | Part 43 Appendix B |  |  |  |
| 13. Other:  |                    |  |  |  |
|   |                    |  |  |  |
|   |                    |  |  |  |
|   |                    |  |  |  |
|   |                    |  |  |  |
|   |                    |  |  |  |
|   |                    |  |  |  |
|   |                    |  |  |  |
|   |                    |  |  |  |

**Figure 6-82. Letter Confirming Any Unsatisfactory Items**

[FAA Letterhead]

[Date]

[Operator’s name and address]

Dear [operator’s name]:

This letter is to confirm those items that were unsatisfactory at the satellite site inspection conducted at [location] on [date] and the present status of those items.

[The inspector should list each item and indicate:

- Whether sufficient corrective action has been taken by the operator;
- That enforcement action may be initiated if no corrective action is taken by the operator; and
- If a followup inspection is required to determine if corrective action has been completed, and when that inspection will take place.]

Sincerely,

[Principal operations inspector’s (POI) signature]

**RESERVED.** Paragraphs 6-1510 through 6-1525.

**VOLUME 12 INTERNATIONAL AVIATION****CHAPTER 2 FOREIGN AIR CARRIERS OPERATING TO THE UNITED STATES  
AND FOREIGN OPERATORS OF U.S.-REGISTERED AIRCRAFT ENGAGED IN  
COMMON CARRIAGE OUTSIDE THE UNITED STATES****Section 5 Part 129 Part C Operations Specifications—Airplane Terminal Instrument  
Procedures and Airport Authorizations and Limitations**

**12-214 PART C OPERATIONS SPECIFICATIONS (OPSPECS).** The Federal Aviation Administration (FAA) issues Part C OpSpecs to foreign air carriers who conduct airplane operations under Title 14 of the Code of Federal Regulations (14 CFR) part 129. The FAA does not issue Part C OpSpecs to foreign air carriers who conduct only helicopter operations. Instrument flight rules (IFR) helicopter operators are issued Part H OpSpecs. The FAA does not usually issue Part C OpSpecs to part 129 on-demand operators who are restricted to visual flight rules (VFR)-only operations.

**OPSPEC C048. ENHANCED FLIGHT VISION SYSTEM (EFVS) USE ON  
STRAIGHT-IN INSTRUMENT APPROACH PROCEDURES OTHER THAN  
CATEGORY II OR CATEGORY III.**

**A. Authorization.** The C048 authorization is issued to foreign air carriers conducting airplane operations under 14 CFR part 129. C048 authorizes a certified enhanced flight vision system (EFVS) to be used to descend below Decision Altitude (DA) or minimum descent altitude (MDA) on straight-in instrument approach procedures (IAP), other than Category (CAT) II or CAT III, in accordance with applicable U.S. regulations.

**B. EFVS Use.** Title 14 CFR part 91, § 91.175(l) and (m) authorize an EFVS to be used to descend below DA or MDA on straight-in IAP, other than CAT II or CAT III. These regulations require that the EFVS have an FAA type design approval (type certificate (TC) or Supplemental Type Certificate (STC)) or, for foreign-registered aircraft, that the EFVS complies with all of the EFVS requirements of the U.S. regulations. An EFVS uses imaging sensor technologies to provide a real-time enhanced image of the forward external visual scene to the pilot. An EFVS is used by the pilot to determine that the enhanced flight visibility is not less than the visibility prescribed in the IAP to be flown and that the required visual references for descending below DA or MDA down to 100 feet (ft) above the touchdown zone elevation (TDZE) are distinctly visible and identifiable using the sensor image when the runway environment is not visible using the pilot's natural vision. An EFVS also helps to verify proper runway alignment at night and in low visibility conditions.

NOTE: The authorization associated with this OpSpec is in keeping with the intent of § 91.175(l) and (m) and does not authorize an EFVS to be used to satisfy the § 91.175 (e)(2) requirement that an identifiable part of the airport be distinctly visible to the pilot during a circling maneuver at or above MDA or while descending below MDA. An EFVS is permitted to be used to identify the required visual references in order to descend below DA or MDA on straight-in IAP only. An instrument approach with a circle-to-land maneuver is not a straight-in IAP

and does not have straight-in minima. While the regulations do not prohibit EFVS from being used during any phase of flight, they do prohibit it from being used for operational credit on anything but a straight-in IAP. An EFVS may be used during a circle-to-land maneuver provided the visual references required at or above MDA and throughout the circling maneuver are distinctly visible using natural vision. Use of EFVS during a circling maneuver may enable a pilot to see much more of the external scene at night and in low visibility conditions than would be possible using natural vision, thereby enhancing situational awareness (SA).

**C. Visual References.** In order to descend below DA or MDA, the following visual references for the runway of intended landing must be distinctly visible and identifiable to the pilot using the EFVS:

- 1) The Approach Light System (ALS) (if installed); or
- 2) The following visual references in both subparagraphs a) and b) below:
  - a) The runway threshold, identified by at least one of the following:
    1. The beginning of the runway landing surface;
    2. The threshold lights; or
    3. The runway end identifier lights (REIL).
  - b) The touchdown zone (TDZ), identified by at least one of the following:
    1. The runway TDZ landing surface;
    2. The TDZ lights;
    3. The TDZ markings; or
    4. The runway lights.

**D. Natural Vision.** To descend below 100 ft above the TDZE of the runway of intended landing, the pilot must be able to see the visual references required by § 91.175(l)(4) using natural vision, without relying on the EFVS. That is, the enhanced flight visibility observed by use of an EFVS is no longer applicable. At this point, the flight visibility only has to be sufficient for the pilot to distinctly see and identify the lights or markings of the threshold or the lights or markings of the TDZ using natural vision before continuing to a landing.

**E. Using Natural Vision.** The visual references required by § 91.175(l) using EFVS to descend below DA or MDA are different from those required by § 91.175(c) using natural vision. Table 12-4A, Required Visual References, Section 91.175(c) and (l), provides a comparison of visual reference requirements for both natural vision and EFVS. Generally, the visual reference requirements for EFVS are more stringent than those for natural vision. For example, § 91.175(c) allows descent below DA or MDA using natural vision when only one of

the visual references listed can be seen. For EFVS, § 91.175(l) requires that a pilot either see the ALS or at least one visual reference listed for the threshold environment and one visual reference listed for the TDZ environment. When natural vision is used, the Visual Approach Slope Indicator (VASI) is permitted to be used as a required visual reference for descent below DA or MDA. Under § 91.175(l) using EFVS, however, the VASI cannot be used as a visual reference for descent below DA or MDA using EFVS because the EFVS display is monochromatic. For descent below 100 ft above TDZE using natural vision, § 91.175(c)(3) permits the approach lights to be used as a reference only if the red terminating bars or the red side row bars are visible and identifiable. For EFVS operations below 100 ft above TDZE, the approach lights with red side row bars are not permitted to be used as a visual reference, even though the pilot is required to rely only on natural vision to descend below 100 ft above TDZE. The only visual references permitted to be used for EFVS operations below 100 ft above TDZE are the lights or markings of the threshold or the lights or markings of the TDZ.

**Table 12-4A. Required Visual References, Section 91.175(c) and (l)**

| <p align="center"><b>Required Visual References Using<br/><i>Natural Vision</i><br/>(14 CFR 91.175(c))</b></p>   | <p align="center"><b>Required Visual References Using an<br/><i>Enhanced Flight Vision System (EFVS)</i><br/>(14 CFR 91.175(l))</b></p>   |
|--|---|
| <p><b>For operation below Decision Altitude (DA) or minimum descent altitude (MDA):</b><br/>At least one of the following visual references:</p> <p>Approach Light System (ALS).<br/>Threshold.<br/>Threshold markings.<br/>Threshold lights.<br/>Runway end identifier lights (REIL).<br/>Visual Approach Slope Indicator (VASI).<br/>Touchdown zone (TDZ).<br/>TDZ markings.<br/>TDZ lights.<br/>Runway.<br/>Runway markings.<br/>Runway lights.</p> | <p><b>For operation below DA or MDA:</b></p> <p>The following references, using the EFVS:</p> <p>ALS</p> <p><i>OR</i></p> <p><u><b>BOTH</b></u> paragraphs A and B:</p> <p>A. The runway threshold, identified by at least one of the following:</p> <ul style="list-style-type: none"> <li>• Beginning of the runway landing surface,</li> <li>• Threshold lights, or</li> <li>• REIL.</li> </ul> <p>AND</p> <p>B. The touchdown zone, identified by at least one of the following:</p> <ul style="list-style-type: none"> <li>• Runway TDZ landing surface,</li> <li>• TDZ lights,</li> <li>• TDZ markings, or</li> <li>• Runway lights.</li> </ul> |

| <p align="center"><b>Required Visual References Using<br/><i>Natural Vision</i><br/>(14 CFR 91.175(c))</b></p>  | <p align="center"><b>Required Visual References Using an<br/><i>Enhanced Flight Vision System (EFVS)</i><br/>(14 CFR 91.175(l))</b></p>   |
|---|---|
| <p><b>Descent below 100 ft height above TDZE:</b></p> <p>At least one of the following visual references:</p> <p>ALS, as long as the red terminating bars or red side row bars are also distinctly visible and identifiable.</p> <p>Threshold.</p> <p>Threshold markings.</p> <p>Threshold lights.</p> <p>REIL.</p> <p>VASI.</p> <p>TDZ.</p> <p>TDZ markings.</p> <p>TDZ lights.</p> <p>Runway.</p> <p>Runway markings.</p> <p>Runway lights.</p> | <p><b>Descent below 100 ft height above TDZE:</b></p> <p>The following references, using natural vision:</p> <p>The lights or markings of the threshold,</p> <p><i>OR</i></p> <p>The lights or markings of the TDZ.</p> |

**F. Conditions of Approval.** Before issuing C048 based on aircraft equipment and operation, inspectors shall ensure that the foreign air carrier meets the following conditions:

**1) Aircraft and Associated Aircraft Systems.** The authorized aircraft must be equipped with an EFVS certified for conducting operations under § 91.175(l) and (m) and must either have an FAA type design approval (TC or STC) or, for a foreign-registered aircraft, the EFVS must comply with all of the EFVS requirements of the U.S. regulations. Furthermore, the foreign air carrier must be approved by the State of Operator to use an EFVS on straight-in IAPs, other than CAT II or CAT III, and a copy of that approval must be provided to the FAA. Field approvals for EFVS installations are not authorized. An EFVS is an installed airborne system and must include:

a) A head-up display (HUD) or equivalent display.

1. The EFVS sensor imagery and aircraft flight symbology must be presented so that they are clearly visible to the Pilot Flying (PF) in his normal position, line of vision, and looking forward along the flightpath.

2. The EFVS display must be conformal. That is, the sensor imagery, aircraft flight symbology, and other cues that are referenced to the imagery and external scene must be aligned with and scaled to the external view.

b) Sensors that provide a real-time image of the forward external scene topography.

c) Computers and power supplies.

- d) Indications and controls.
- e) Aircraft flight symbology that includes at least the following:
  - 1. Airspeed,
  - 2. Vertical speed,
  - 3. Aircraft attitude,
  - 4. Heading,
  - 5. Altitude,
  - 6. Command guidance as appropriate for the approach to be flown,
  - 7. Path deviation indications,
  - 8. Flight Path Vector (FPV) cue, and
  - 9. Flight Path Angle (FPA) reference cue. The FPA reference cue must be displayed with the pitch scale and must be selectable by the pilot for the appropriate approach descent angle.

NOTE: An EFVS must not be confused with an Enhanced Vision System (EVS). An EVS is an electronic means to provide the flightcrew with a sensor-derived or enhanced image of the external scene (e.g., millimeter wave radar, Forward Looking Infrared (FLIR)). Unlike an EFVS, an EVS does not necessarily provide the additional flight information/symbology required by § 91.175(m). An EVS might not use a HUD, and might not be able to present the image and flight symbology in the same scale and alignment as the outside view. This system can provide SA to the pilot, but does not meet the regulatory requirements of § 91.175(m). As such, an EVS cannot be used as a means to determine enhanced flight visibility and to descend below the DA or MDA.

**2) Flightcrew Procedures.** The pilot can continue the approach below DA or MDA to 100 ft above the TDZE if he or she determines that the enhanced flight visibility observed by the use of a certified EFVS is not less than the minimum visibility prescribed in the straight-in IAP being flown, and the pilot acquires the required visual references prescribed in § 91.175(l)(3). The pilot uses the EFVS to visually acquire the runway environment, confirm lateral alignment, maneuver to the extended runway centerline (RCL), and continue a normal descent from the DA or MDA to 100 ft above the TDZ.

a) A pilot may continue the approach below 100 ft above the TDZE as long as the flight visibility, using natural vision, is sufficient for the required visual references to be seen. In addition, the aircraft must be continuously in position from which a descent to landing can be made on the intended runway, at a normal rate of descent using normal maneuvers, and at a descent rate that allows touchdown to occur within the TDZ.

b) It should be noted that the rule does not require the EFVS to be turned off or the sensor image to be removed from the HUD in order to continue to a landing without reliance on the EFVS sensor image. In keeping with the requirements of the regulations, however, the decision to continue descending below 100 ft above the TDZE must be based on seeing the visual references required by the rule through the HUD by means of natural vision. An operator may not continue to descend beyond this point by relying on the sensor image displayed on the HUD.

c) EFVS equipage may vary. Some aircraft may be equipped with a single EFVS display. Others may have an EFVS display and a separate repeater display located in or very near the primary field of view (FOV) of the nonflying pilot. Still others may be equipped with dual EFVS displays. The regulations do not require a repeater display or a separate EFVS for the nonflying pilot, but neither do they preclude it. Procedures for EFVS operations should be developed that are appropriate to the equipment installed and the operation to be conducted. In establishing these procedures, both normal and abnormal or failure modes must be addressed for the various phases of the approach (e.g., prior to final approach fix (FAF), FAF to DA or MDA, and after reaching DA or MDA).

d) Procedures should support appropriate levels of crew coordination with special emphasis on the transition to and reliance on natural vision. Each EFVS has a specified limit to the FOV. An offset final approach or crosswinds may affect use of the EFVS, as well as when the decision is made to rely on natural vision for the primary reference. Also, specific pilot/crew decisionmaking and coordination must be addressed in the segment from FAF to DA or MDA (or point that a decision to rely on natural vision is made) and the EFVS segment (from DA or MDA down to 100 ft height above TDZE). The transition from enhanced vision to natural vision for landing is an especially important segment. Foreign air carriers should describe how common SA will be achieved—either procedurally when a single EFVS is used or through a combination of procedures and equipment when a repeater display or dual EFVSs are used.

**3) Flightcrew Qualification and EFVS Training Program.** The flightcrew must be trained in the use of EFVS and demonstrate proficiency conducting straight-in IAPs, other than CAT II or CAT III (e.g., CAT I instrument landing system (ILS), nonprecision, approach procedures with vertical guidance (APV), etc.). Part 129 operators must have approved training programs. Part 129 operators must have approved training programs approved by the State of Operator. These programs should include the following items:

a) Pilots should demonstrate knowledge of the regulatory requirements for EFVS operations contained in § 91.175 for approach to straight-in landing operations below DA or MDA.

b) Pilots operating an EFVS should be able to demonstrate knowledge and proficiency in the use of this equipment through training and checking as required by the type of operation. As a minimum, pilots should be knowledgeable and proficient in the following areas:

*1.* The specific sensor technology to include limitations that impact enhanced vision under various environmental conditions (weather, system resolution, external interference, thermal characteristics, variability, and unpredictability of sensor performance, etc.).

2. EFVS operational considerations:
  - a. Use of HUD symbology.
  - b. Preflight and warmup requirements, as applicable.
  - c. Controls, modes, adjustments, and alignment of the EFVS/HUD.
  - d. Importance of the Design Eye Position (DEP) in acquiring the proper EFVS image.
  - e. System limitations, normal, and abnormal procedures, including visual anomalies such as noise, blooming, and thermal crossover.
  - f. Use of EFVS on precision, non-precision, and APV approaches.
  - g. Use of caged and uncaged modes of the EFVS, if applicable, in crosswind conditions.
3. Impact of EFVS on other aircraft systems, such as autopilot minimum use height limitations.
4. Runway lighting systems and ALS.
5. Crew briefings, callouts, and crew coordination procedures.
6. Visual references required by § 91.175(l)(3) and (4).
7. Transition from EFVS imagery to natural vision and recognition of the required visual references.
8. Obstacle clearance requirements for approach and missed approach:
  - a. Flight planning for obstacle clearance on a missed approach (e.g., go-around or bailed landing) below DA or MDA.
  - b. Use and significance of a published vertical descent angle (VDA) on IAPs.
  - c. Vertical Path (VPATH), Vertical Approach Slope Indicator (VASI), precision approach path indicator (PAPI), published visual descent points (VDP), calculated VDPs, etc.
  - d. Use of the FPA reference cue and FPV cue.
9. Missed approach requirements—loss of required equipment, enhanced flight visibility, or required visual references for various phases of the approach (e.g., FAF to DA or MDA, and after passing DA or MDA).

c) The flightcrew shall not conduct any operations authorized by this paragraph unless they are trained and qualified in the equipment and special procedures to be used. For foreign air carriers operating under part 129, no pilot in command (PIC) or second in command (SIC) shall conduct EFVS operations in any airplane until that pilot has successfully completed the foreign air carrier's approved EFVS training program and has been certified as being qualified for EFVS operations by one of the foreign air carrier's check airmen properly qualified for EFVS operations or a civil aviation authority (CAA) inspector from the State of Operator. EFVS training is required in accordance with the Standards established in International Civil Aviation Organization (ICAO) Annex 6, Part 1. It should be noted that foreign EFVS regulatory requirements, operational concepts, operational authorizations, airworthiness criteria, and equipment requirements may differ from those specified in § 91.175(l) and (m). Where there are differences, it is important to ensure that the foreign air carrier's approved training program addresses those differences and that operations are not authorized without appropriate training. European Aviation Safety Agency (EASA) regulations for EFVS operations can be found in OPS 1: Commercial air transportation (aeroplanes), Annex III of Council Regulation (EEC) No 3922/91 (EU Ops) Subpart E, appendix 1 to OPS 1.430(h). It should be noted that EASA uses the term EVS to describe a system that has the same elements, features, and characteristics as an EFVS certified by the FAA for use in the United States.

**4) Aircraft Flight Manual (AFM) Provisions.** Foreign-registered aircraft used by a foreign air carrier for EFVS operations within the United States must have AFM provisions reflecting an appropriate level of EFVS capability that meets the display, features, and characteristics required by § 91.175. The approved AFM for the aircraft must contain EFVS provisions appropriate to the EFVS operation authorized. For foreign persons or foreign air carriers operating U.S.-registered aircraft, the approved AFM must contain EFVS provisions appropriate to the EFVS operation authorized.

**5) Minimum Equipment List (MEL).** For foreign air carriers operating foreign-registered aircraft within the United States, the MEL for the aircraft, including EFVS provisions, if MEL relief for EFVS is sought, must be approved by the State of Operator CAA. For foreign persons or foreign air carriers operating U. S.-registered aircraft, the MEL for the aircraft, including EFVS provisions, if MEL relief for EFVS is sought, must be approved by the FAA and the State of Operator when operations issues are involved.

**6) Approved Maintenance Program.** For foreign air carriers operating foreign-registered aircraft within the United States, the maintenance program must be approved by the State of Operator CAA. Foreign persons or foreign air carriers operating U. S.-registered aircraft, within or outside the United States in common carriage, shall in accordance with part 129, § 129.14, "ensure that each aircraft is maintained in accordance with a program approved by the Administrator." This maintenance program should also address issues unique to the EFVS.

**OPSPEC C050. SPECIAL PILOT-IN-COMMAND QUALIFICATION AIRPORTS (required for all foreign air carriers conducting IFR operations into special airports requiring special qualification by the pilot in command, as designated by the FAA).**

**A. The Intent of OpSpec C050.** This OpSpec is issued to authorize the foreign air carrier to operate to U.S. special airports, designated as Special Pilot-In-Command (PIC) Qualification Airports by the FAA. Additionally, this paragraph imposes the same requirements regarding Special PIC Qualification Airports that would be imposed on a U.S. carrier for operations in accordance with 14 CFR part 121, § 121.445, in an attempt to ensure an equivalent level of safety. This OpSpec applies to:

- 1) Scheduled operations conducted using turbojet-powered airplanes or airplanes having a passenger-seat configuration of more than nine passenger seats, excluding each crewmember seat.
- 2) Any operation with large aircraft as defined in OpSpec A002 of the air carrier's OpSpecs.

**B. Representing a New Process.** This OpSpec and associated guidance also represent part of a new process for updating and maintaining a current Special PIC Qualification Airport List and notification to the foreign air carrier. Advisory circular (AC) 121.445-1D, Pilot-In-Command Qualifications for Special Area/Routes and Airports, dated June 20, 1990, was cancelled and OpSpec C050 was put into place.

**C. The Special PIC Qualification Airports List.** The current Special PIC Qualification Airports list is maintained on the Flight Standards Information Management System (FSIMS). The list is also maintained in the automated Operations Safety System (OPSS) guidance subsystem in association with OpSpec C050 for those carriers that have access to the OPSS through the Industry Operations Specifications Subsystem (IOPSS).

**D. Special PIC Qualifications Airports.** The FAA has designated certain airports in the United States as Special PIC Qualification Airports due to items such as surrounding terrain, obstructions, or complex approach or departure procedures (DPs). The foreign air carrier is only authorized to conduct instrument flight rules (IFR) operations into U.S. airports listed as Special PIC Qualification Airports with large aircraft as defined in OpSpec A002, turbojet-powered airplanes, or airplanes having a passenger seat configuration of more than nine passenger seats, excluding each crewmember seat, in accordance with the following provisions:

- 1) The foreign air carrier may not use any person, nor may any person serve, as PIC to or from a U.S. airport determined to require special airport qualifications, as indicated in the FAA's list of Special PIC Qualification Airports, unless:
  - a) The PIC or second in command (SIC) has made an entry to that airport using an aircraft or the entry is simulated using a level D simulator or better in accordance with a qualification program approved/accepted by their Civil Aviation Authority (CAA), including takeoff and landing, while serving as a pilot flightcrew member within the preceding 12 calendar-months, or
  - b) The PIC has qualified by using a pictorial means approved/accepted by the foreign air carrier's CAA for that airport.

c) The PIC or SIC has made an entry to that airport while occupying the flight deck observer's seat, they are qualified on the aircraft type and monitor radio communications during the entry, and the procedure is included in the carrier's manual, which has been approved/accepted by the State of Operator CAA.

d) The restrictions of subparagraph D1) do not apply when an entry (including a takeoff or a landing) to that airport is being made if the ceiling at that airport is at least 1,000 feet (ft) above the lowest minimum en route altitude (MEA) or minimum obstruction clearance altitude (MOCA), or the initial approach altitude prescribed for the instrument approach procedure (IAP) for that airport, and the visibility at that airport is at least 3 miles.

2) In reference to subparagraph D1)a), the PIC or SIC would receive equally valuable familiarization with the Special PIC Qualification Airports whether they are the Pilot Flying (PF) or the pilot-not-flying (PNF) during the entry. There is no requirement for a pilot to act as PF during takeoff or landing in order for the entry to count towards the requirements of OpSpec C050.

3) In reference to subparagraph D1)c), in order for the pilot to receive a familiarization benefit equal to a pilot who qualifies in a simulator or using pictorial means, in order for the foreign air carrier to use the provision of subparagraph D1)c), the foreign air carrier's manual needs to clearly spell out the procedures used by a pilot occupying the flight deck for the purposes of qualification at U.S. Special PIC Qualification Airports. The foreign air carrier shall provide their responsible Flight Standards District Office (FSDO)/International Field Office (IFO)/International Field Unit (IFU) with a copy of this procedure and evidence of approval/acceptance by the State of Operator CAA, subparagraph c3) in OpSpec C050, which specifies this provision, is a selectable subparagraph that must be selected if applicable from the dropdown in subparagraph c during paragraph preparation.

**E. Applicability.** This OpSpec is issued to all foreign air carriers conducting IFR operations into the United States and establishes provisions the foreign air carrier must comply with to operate to Special PIC Qualification Airports.

#### **OPSPEC C051. TERMINAL INSTRUMENT PROCEDURES (required for all air carriers conducting IFR operations).**

**A. Purpose.** The FAA issues OpSpec C051 to all foreign air carriers who operate airplanes and conduct any flight operations under instrument flight rules (IFR). This paragraph provides direction and guidance on acceptance of U.S. Terminal Instrument Procedures (TERPS). This OpSpec also provides additional guidance to the foreign air carrier for converting any takeoff and landing minimum expressed in the metric linear measurement system to the U.S. standard linear measurement system

**B. No Inspector Input Required.** This paragraph requires no inspector input. Additional information concerning TERPS is contained in Volume 4, Chapter 2, Section 1.

#### **OPSPEC C052. STRAIGHT-IN NON-PRECISION, APV, AND CATEGORY I PRECISION APPROACH AND LANDING MINIMA—ALL AIRPORTS (required for all carriers conducting IFR operations).**

**A. Applicability.** OpSpec C052 specifies the types of instrument approaches the foreign air carrier is authorized to conduct, prohibits the use of other types of instrument approaches, and authorizes the lowest straight-in non-precision, approach procedures with vertical guidance (APV), and Category (CAT) I precision approach and landing minima. Before authorizing a type of instrument approach procedure (IAP), the principal operations inspector (POI) must ensure the foreign air carrier has established the aircraft system eligibility and that its manual, which the State of Operator must have approved/accepted, includes both flightcrew training and procedures, as applicable, for the types of approaches authorized. All of the approaches authorized by OpSpec C052 must be published in accordance with 14 CFR part 97.

NOTE: Questions regarding the issuance of OpSpec/management specification (MSpec)/letter of authorization (LOA) C052 should be directed to the Flight Technologies and Procedures Division (AFS-400) at 202-385-4623 or the International Programs and Policy Division (AFS-50) at 202-385-8070.

**B. Types of Instrument Approaches Authorized.** In paragraph C052, Table 1 specifies the types of instrument approaches the operator is authorized to conduct under instrument flight rules (IFR) and prohibits the use of other types of instrument approaches. In the Web-based Operations Safety System (WebOPSS), the POI will select the approaches that apply to the operator. Refer to the Aeronautical Information Manual (AIM) for a detailed description of each approach.

1) See Volume 4, Chapter 2, Section 1 for information on required training for various types of approaches.

2) All the approaches approved by OpSpec/MSpec/LOA C052 must be published in accordance with part 97.

3) If the foreign air carrier is authorized to conduct Global Positioning System (GPS) procedures as listed in Table 1 of OpSpec/MSpec/LOA C052, the aircraft and equipment must be listed in Table 1 of OpSpec/MSpec/LOA B034.

4) Required Navigation Performance Approaches (RNP APCH)—Area Navigation (RNAV) (RNP) approaches are different from RNAV (GPS) approaches in that a specific performance requirement is defined for the navigation system, and onboard performance monitoring and alerting is required. An RNP APCH typically addresses only the requirement for the lateral navigation aspect (2D navigation) along straight segments. RNP approaches that contain a curved segment (RF leg), Final Approach Segments (FAS) specifying less than 0.3 nm accuracy, or a Missed Approach Segment (MAS) that specifies less than 1.0 nm accuracy, require more rigorous equipment qualification and training so special authorization is required. These are referred to as RNAV RNP IAP with Authorization Required (AR) or RNP AR approaches. C052 does not authorize RNP AR operations. Authorization for RNAV RNP AR approaches is through nonstandard OpSpec C384. (Refer to the current edition of Advisory Circular (AC) 90-101, Approval Guidance for RNP Procedures with AR.)

5) Three groups of IAPs may be authorized in OpSpec/MSpec/LOA C052:

a) Column one specifies the Nonprecision Approaches (NPA) without vertical guidance that are authorized by OpSpec/MSpec/LOA C052. Operators must ensure the aircraft will not go below the minimum descent altitude (MDA) without the required visual references specified in 14 CFR part 91, § 91.175.

1. The International Civil Aviation Organization (ICAO) term for an airport surveillance radar (ASR) approach is surveillance radar approach (SRA).

2. Belgium labels these approaches as “SRE.” Select “ASR/SRA/SRE” in column one to authorize these approaches.

b) Column two of OpSpec/MSpec/LOA C052 provides for the authorization of APV. These approaches provide vertical guidance, but do not meet the same standards as precision approach systems (e.g., instrument landing systems (ILS), microwave landing systems (MLS), and Ground Based Augmentation System (GBAS)). These APVs are trained using an approved method that allows descent to a published decision altitude (DA).

1. APV approaches may contain Localizer Performance with Vertical Guidance (LPV) minima requiring wide area augmentation system (WAAS) and lateral navigation (LNAV)/vertical navigation (VNAV) minima which may be flown with either barometric vertical navigation (baro-VNAV) or WAAS-based VNAV and are authorized in column two of Table 1 of OpSpec/MSpec/LOA C052. (See subparagraph C to determine applicable lines of minima.) The AIM and the approach chart legend also have this information.

2. Aircraft accomplishing RNP approaches (RNAV (GPS) or RNAV Global Navigation Satellite Systems (GNSS)) are required to monitor lateral and, if approved for operational credit, vertical guidance deviations. For baro-VNAV approach operations on an RNP approach using the LNAV/VNAV minimums, the current vertical deviation limits are +100/-50 feet. Aircraft qualified using the current edition of AC 20-138, Airworthiness Approval of Positioning and Navigation Systems, deviation display requirements for navigation, may use a vertical deviation limit of  $\pm 75$  feet (or a smaller value). This information must be published in the Airplane Flight Manual (AFM), a Supplemental Type Certificate (STC) or verified by the Aircraft Evaluation Group (AEG).

3. To authorize RNAV APVs, select “RNAV (GPS)” (for part 97 approaches) or “RNAV Global Navigation Satellite System (GNSS)” (for foreign approaches) from the selectable menu for column two of the OpSpec/MSpec/LOA C052 template Table 1.

c) Column three of OpSpec/MSpec/LOA C052 provides for the authorization of CAT I precision IAPs from an electronic glideslope (ILS, MLS, or GPS Landing System (GLS)).

1. “\*RNAV/ILS” in column three may only be selected in C052 if the operator meets the requirements in OpSpec/MSpec/LOA C063.

2. For pilot qualifications, the initial qualification segment of the certificate holder’s approved ILS precision runway monitor (PRM) training program must be successfully completed prior to conducting ILS PRM approach and landing operations. Initial training materials must include published ILS PRM approach chart materials, the AIM, related

Notices to Airmen (NOTAM), and the latest available FAA-produced and -approved ILS PRM video entitled “ILS PRM & SOIA Approaches Information for Air Carrier Pilots” that each pilot must view, and which appears on the FAA Web site at [http://www.faa.gov/training\\_testing/training/prm/](http://www.faa.gov/training_testing/training/prm/).

3. Pilots trained in PRM operations under previous guidance are not required to retrain using the new version of the video. However, pilots are required to know the change in operations of Traffic Alert and Collision Avoidance System (TCAS) during PRM operations, as well as the required actions in response to a controller instruction. Testing of knowledge objectives is required as part of initial and recurrent qualification training. See subparagraph K.

**Figure 12-3A. Sample OpSpec/MSpec/LOA C052 Table 1**

**Table 1—Authorized Instrument Approach Procedures**

| <b>Nonprecision Approaches (NPA) Without Vertical Guidance</b> | <b>Approaches With Vertical Guidance (APV)</b> | <b>Precision Approach Procedures (ILS, MLS, &amp; GLS)</b> |
|--|--|--|
| ASR/SRA/SRE  | LDA w/ glideslope                              | ILS  |
| AZI  | RNAV (GPS)                                     | ILS/PRM  |
| AZI/DME  | RNAV (GNSS)                                    | MLS  |
| AZI/DME Back Course  | LDA PRM  | PAR  |
| GPS  | LDA PRM DME                                    | ILS/DME  |
| LDA  | SDF w/ glideslope                              | *RNAV/ILS  |
| LDA/DME  | LOC BC w/ glideslope                           | GLS  |
| LOC  | RNAV (GPS) PRM                                 |  |
| LOC BC   |  |  |
| LOC/DME  |  |  |
| NDB  |  |  |
| NDB/DME  |  |  |
| RNAV (GPS)   |  |  |
| VOR/DME RNAV   |  |  |
| SDF  |  |  |
| TACAN  |  |  |
| VOR  |  |  |
| VOR/DME  |  |  |
| LOC/BC/DME   |  |  |

**C. GPS Authorization.** Volume 4, Chapter 1, Section 2 provides more extensive guidance on GPS and GPS WAAS equipment. The applicant must show that it has the ability to safely conduct GPS operations.

**1) Background.** GPS approach procedures have evolved from overlays of existing conventional approaches to standalone GPS approaches. (Overlay approaches are predicated upon the design criteria of the ground-based Navigational Aid (NAVAID) used as the basis of the approach and do not adhere to the design criteria for standalone GPS approaches.) Due to this transition, the FAA has revised the titles of the approach procedures to reflect these upgrades. The titles of all remaining GPS overlay procedures have been revised on the approach charts to read "...or GPS" (e.g., "VOR or GPS RWY 24"). Therefore, all the approaches that can be used by GPS now contain "GPS" in the title (e.g., "VOR or GPS RWY 24," "GPS RWY 24," or "RNAV (GPS) RWY 24"). During these GPS approaches, underlying ground-based NAVAIDs are not required to be operational and associated aircraft avionics need not be installed, operational, turned on, or monitored (although monitoring of the underlying approach is suggested when equipment is available and operational). Existing overlay approaches may be requested using the GPS title. For example, request "GPS RWY 24" to fly the VOR or GPS RWY 24 approach.

NOTE: VOR/DME RNAV approaches will continue to be identified as VOR/DME RNAV RWY (Number) (e.g., VOR/DME RNAV RWY 24). VOR/DME RNAV procedures which can be flown by GPS will be annotated with "or GPS" (e.g., VOR/DME RNAV or GPS RWY 24).

**2) WAAS.** As the satellite navigation evolution continues, the WAAS has been developed to improve the accuracy, integrity, and availability of GPS signals. WAAS receivers support all basic GPS approach functions and will provide additional capabilities. One of the major improvements provided by the WAAS is the ability to generate an electronic glidepath, independent of ground equipment or barometric aiding. There are differences in the capabilities of the WAAS receivers. Some approach-certified receivers will only support a glidepath with performance similar to Baro-VNAV, and are authorized to fly the LNAV/VNAV line of minima on the RNAV (GPS) approach charts. Receivers with additional capability such as update rate and integrity limits are authorized to fly the LPV or Localizer Performance (LP) line of minima. WAAS approach procedures may provide LPV, LNAV/VNAV, LP, and LNAV minimums and are charted as RNAV (GPS) RWY (Number) (e.g., RNAV (GPS) RWY 24). For further guidance, please see the AIM or contact AFS-400 at FAA HQ.

NOTE: Some WAAS installations do not support approaches at all, while some do not support LPV or LP lines of minima.

**3) Local Area Augmentation System (LAAS).** An additional augmentation system, the LAAS has been developed to provide precision approaches similar to ILS at airfields. These precise approaches are based on GPS signals augmented by ground equipment. The international term for LAAS is GBAS and the approaches which use the equipment are referred to as GBAS Landing System (GLS) or Global Navigation Satellite System (GNSS) Landing System (GLS) approaches. LAAS equipment consists of a GBAS Ground Facility (GFF) supported by a minimum of four accurately surveyed reference stations and an uplink antenna called the very

high frequency (VHF) Data Broadcast (VDB) antenna, as well as an aircraft LAAS receiver. The GGF can support multiple runway ends or landing areas served by procedures that are within the service coverage.

a) Similar to LPV and ILS approaches, GLS provides lateral and vertical guidance. By design, LAAS was developed as an “ILS look-alike” system from the pilot perspective. Unlike WAAS, LAAS may support approaches to CAT III minimums in the future due to its nearly identical performance standards to ILS in terms of accuracy, integrity, availability and continuity. Portions of the GLS approach prior to and after the FAS may be based on RNAV or RNP segments. Therefore, a switch transition between RNAV or RNP and GLS modes may be required. In the future, the GGF may be able to support portions of the procedure outside the FAS.

b) There are also a few differences from LPV, GLS, and ILS approaches in terms of charting, procedure selection, and identification. The LAAS procedure is titled “GLS RWY XX” on the approach chart. In the aircraft, pilots will select a five-digit GBAS channel number or associated approach within the flight management system (FMS) menu. Selection of the GBAS channel number by pilot or FMS also tunes the VDB. The VDB provides information to the airborne receiver where the guidance is synthesized. The LAAS procedure is identified by a four alpha-numeric character field referred to as the Reference Path Indicator (RPI) or approach ID. This identifier is analogous with the IDENT feature of the ILS. The RPI is charted. Following procedure selection, confirmation that the correct LAAS procedure is loaded can be accomplished by cross-checking the charted RPI with the cockpit-displayed RPI or audio identification of the RPI with Morse code (for some systems). Once selected and identified, the pilot will fly the GLS approach using the same techniques as an ILS.

**D. Authorized Criteria for Approved IAPs.** For operations to all U.S. airports, operators are authorized to execute instrument approach operations on IAPs that have been published:

- 1) Under part 97.
- 2) Under the criteria in the current edition of Order 8260.3, United Standard for Terminal Instrument Procedures (TERPS).
- 3) Under any other criteria authorized by AFS-400.
- 4) By the U.S. military agency operating the U.S. military airport.
- 5) All published Standard Instrument Approach Procedures (SIAP) in the United States meet this requirement.

**E. Runway Visual Range (RVR).** Touchdown zone (TDZ) RVR is controlling for all operations authorized in paragraph C052. All other RVR reports are advisory. A mid-field RVR report may substitute for an inoperative TDZ RVR report, except for Special Authorization (SA) CAT I operations as described in subparagraph I below.

**F. Continuous Descent Final Approach (CDFA) Technique.** A CDFA is a specific technique for flying the FAS of an IAP as a continuous descent, without level-off, from an altitude at or above the final approach fix (FAF) altitude, typically to a point approximately 50 feet (ft) above the runway threshold or the point where the flare will begin. For approaches that do not use LNAV/VNAV, LPV, or an ILS/MLS/GLS glidepath, a CDFA technique is recommended. When electronic or a pre-stored computed vertical guidance is not used, Vertical Speed (VS) or FPA may be used to achieve a CDFA profile. Compared to the “step down” descent approach technique, where the aircraft descends step-by-step prior to the next minimum altitude, a CDFA technique has safety and operational advantages, such as standardization of procedures, simplification of the decision process (one technique and one decision at one point), and use of a stable flightpath. However, precision approach (ILS, MLS, GLS) obstacle penetration is not provided. The continuous descent approach technique can be flown on almost any published approach when VNAV or ILS/MLS/GLS is not available.

1) When using a CDFA technique, the decision point to determine if the flightcrew has the required visual references in sight to continue below the MDA may only be treated like a DA in reference to approach profiles and procedures. The operator must add an altitude increment to the MDA (e.g., 50 ft) to determine the altitude at which the missed approach must be initiated in order to prevent descent below the MDA or flight beyond the MAP.

2) The operator should ensure that, prior to conducting a CDFA, each flightcrew member intending to fly CDFA profiles undertakes training appropriate to the aircraft, equipment, and IAPs to be flown.

**G. Reduced Precision CAT I Landing Minima.** Paragraph C052 specifies the equipment usage requirements and part 97 SIAP depiction required for reduced CAT I landing minima. Credit is given for flight director (FD), autopilot, and head-up display (HUD) usage. The POI should allow the use of 1800 RVR minima to runways without centerline (CL) lighting or TDZ lighting, provided the SIAP contains a straight-in ILS minimum with the chart note, “RVR 1800 Authorized with use of FD or autopilot or HUD to DA.” Additionally, the foreign air carrier issued C052 is allowed to continue to use 1800 RVR line of minima on SIAPs without the above procedural note when the TDZ and/or CL lights are inoperative, if the approach is conducted in accordance with the equipment requirements outlined in paragraph C052. This is also reflected in the published inoperative components table for IAPs.

1) **FAA Approval.** Operators may continue to use the standard CAT I minima based solely on ground lighting systems without alteration of current authorizations or procedures. Operators can utilize reduced CAT I landing minima, provided the SIAP contains a straight-in ILS minimum with the chart note, “RVR 1800 Authorized with use of FD or autopilot or HUD to DA.”

2) **Conditions of Approval.** Before issuing the C052 authorization to use CAT I minima based on aircraft equipment and operation, inspectors shall ensure that each operator meets the following conditions:

a) Aircraft and Associated Aircraft Systems. The authorized aircraft must be equipped with an FD, or autopilot, or HUD that provides guidance to DA. The FD, autopilot, or HUD must be used in approach mode (e.g., tracking the localizer and the glideslope). Inspectors must establish that the FD, autopilot, or HUD are certified for use down to an altitude of 200 ft above ground level (AGL) or lower.

b) Flightcrew Procedures. The flightcrew must use the FD, or autopilot, or HUD to DA or to the initiation of a missed approach, unless visual references with the runway environment are established, thus allowing safe continuation to a landing.

1. If the FD, autopilot, or HUD malfunctions or becomes disconnected, the flightcrew must execute a missed approach unless the runway environment is in sight.

2. Single pilot operators are prohibited from using the FD to reduced landing minima without accompanying use of an autopilot or HUD.

c) Flightcrew Qualification. Each member of the flightcrew must have demonstrated proficiency using the FD, autopilot, or HUD, (as appropriate) in the foreign air carrier's training program approved by their Civil Aviation Authority (CAA).

**H. SA CAT I.** OpSpec C052 contains selectable text which authorizes SA CAT I ILS approaches to runways without TDZ or RCL lights with a radio altimeter (RA) DH as low as 150 ft and a visibility minimum as low as RVR 1400 when using a HUD to DH. The operator must meet *all* of the following requirements:

**1) Eligibility Requirements.** Before authorizing SA CAT I, the POI must ensure that the foreign air carrier has established the aircraft system eligibility and that its manual, which the State of Operator must have approved/accepted, includes both flightcrew training and procedures, as applicable.

**2) Aircraft Requirements.** To be approved for SA CAT I, each airplane must be authorized and maintained for CAT II operations. Those airplanes and equipment must be listed in Table 2 of OpSpec C059. The authorized airplane(s) must be equipped with a HUD which is approved for CAT II or CAT III operations.

**3) Training Requirements.** The flightcrew must be current and qualified for CAT II operations. Each member of the flightcrew must have demonstrated proficiency using the HUD in the foreign air carrier's training program approved by their CAA. This requirement applies both to initial eligibility for SA CAT I as well as recurrent training.

**4) Operational Requirements:**

a) The flightcrew must use the HUD to DH in a mode used for CAT II or CAT III operations. This mode provides greater lateral and vertical flightpath accuracy and more sensitive alarm limits.

b) The flightcrew must use the HUD to DH, or to the initiation of missed approach, unless adequate visual references with the runway environment are established that allow safe continuation to a landing. Should the HUD malfunction during the approach, the flightcrew must execute a missed approach unless visual reference to the runway environment has been established.

c) The crosswind component on the landing runway must be 15 knots or less, unless the AFM's crosswind limitations are more restrictive.

d) The part 97 SIAP must have a published SA CAT I minimum. The first procedures with these minimums will be published in 2010.

e) Unlike the other approaches authorized in C052, the mid-RVR report may *not* be substituted for the TDZ RVR report when using SA CAT I minima.

**I. PRM.** The FAA began the Multiple Parallel Approach Program (MPAP) to research whether simultaneous ILS approaches to parallel runways would improve capacity. The objective was to achieve improvements in airport arrival rates through the conduct of simultaneous closely-spaced parallel approaches. That objective is being met using PRM.

**1) ILS PRM, LDA PRM and RNAV (GPS) PRM Approaches with Vertical Guidance.** Where parallel RCLs are less than 4,300 feet apart, but not less than 3,000 feet apart, simultaneous ILS PRM approaches may be conducted. Similarly, where parallel RCLs are less than 3,000 feet apart, but no less than 750 feet, simultaneous offset instrument approaches (SOIA) may be conducted using an ILS and an LDA approach with glideslope. Those approaches are labeled "ILS PRM" and "LDA PRM," respectively, on instrument approach charts. Air traffic control (ATC) provides one PRM monitor controller for each runway to provide intrusion protection for the No Transgression Zone (NTZ), located between the two final approach courses. Whenever the runway spacing (or in the case of SOIA the approach course spacing) is less than 3,600 feet and at least 3,000 feet, NTZ monitoring is accomplished using a special PRM radar. Utilization of vertical guidance is required for all PRM approaches. RNAV (GPS) PRM approaches may be substituted for the ILS PRM and/or the LDA PRM approach. Pilots must have completed PRM training prior to conducting any PRM approach. An ILS PRM and its overlaid RNAV (GPS) PRM approach are procedurally equivalent. LDA PRM and its overlaid RNAV (GPS) PRM approach are procedurally equivalent. Pilots may request the RNAV (GPS) PRM approach in lieu of the ILS PRM or LDA PRM approach; however, they may only conduct the approach when specifically cleared to do so by ATC.

**2) The Breakout Maneuver.** Working with industry, the FAA conducted extensive analysis of simulation data and determined that the implementation of PRM and SOIA approach operations to closely-spaced parallel runways requires additional crew training. The primary focus of this training is to raise each pilot's situational awareness in ILS PRM, LDA PRM and RNAV (GPS) PRM operations. The breakout maneuver must be flown manually.

a) Traffic Alert. One important element of the additional training is the pilot understands the difference between a normal missed approach initiated by a pilot and a breakout initiated by a PRM final monitor controller. It must be clear to flightcrews that when the final

monitor controller uses the words “Traffic Alert,” the controller will then give critical instructions that the pilot must act on promptly to preserve adequate separation from an airplane straying into the adjoining approach path.

b) ATC Breakout Maneuver Command to Turn and/or Descend, Climb, or Maintain Altitude. The flightcrew must immediately follow the final monitor controller’s vertical (climb/descend/maintain altitude) and horizontal (turn) commands. If the flightcrew is operating the TCAS in the traffic advisory (TA)/Resolution Advisory (RA) mode and receives a TCAS RA at any time while following the final monitor controller’s command, the flightcrew will simultaneously continue to turn to the controller’s assigned heading and follow the vertical guidance provided by the TCAS RA.

c) Time-to-Turn Standard. Regardless of airplane type, tests and data analysis revealed that pilots normally passed through an angle of bank of at least 3 degrees while rolling into a breakout turn within 10 seconds of receiving a breakout command. (Bank angles of between 20 and 30 degrees were normally achieved during the breakout.) The operator must show that its CAA has determined that pilots can readily meet this time-to-initiate-turn standard prior to the POI authorizing ILS/PRM, LDA/PRM or RNAV (GPS) PRM approaches in OpSpec/MSpec/LOA C052. Flightcrews are required to manually fly the breakout maneuver unless otherwise approved. The air carrier should demonstrate its ability to meet this standard by having representative pilots perform the breakout maneuver while the POI or the POI’s designated representative observes. The demonstration should conform to procedures contained in the air carrier’s approved operating manual for its flightcrews. The commercial operator should submit procedures to its POI for this authorization.

NOTE: In a breakout, ATC will never command a descent below the applicable minimum vector altitude (MVA), thus assuring that no flight will be commanded to descend below 1,000 ft above the highest obstacle during a breakout.

**3) ILS/PRM, LDA/PRM, RNAV (GPS) PRM and the Use of TCAS.** TCAS may be operated in TA/RA mode while executing ILS PRM, LDA PRM or RNAV (GPS) PRM approaches. However, when conducting these operations, pilots must understand that the final monitor controller’s instruction to turn is the primary means for ensuring safe separation from another airplane. Pilots must bear in mind that the TCAS does not provide separation in the horizontal plane; the TCAS accomplishes separation by commands solely in the vertical plane. Therefore, during final approach, only the final monitor controller has the capability to command a turn for lateral separation. Flightcrews are expected to follow any ATC instruction to turn.

a) ATC Command to Turn with TCAS RA. In the unlikely event that a flightcrew should simultaneously receive a final monitor controller’s command to turn and a TCAS RA, the flightcrew must follow both the final monitor controller’s turn command and the TCAS RA’s climb or descent command.

b) TCAS RA Alone. In the extremely unlikely event that an RA occurs without a concurrent breakout instruction from the final monitor controller, the pilot should follow the RA and advise the controller of the action taken as soon as possible. In this instance, it is likely that a breakout command would follow.

c) TCAS Not Required. An operator does not need an operative TCAS to conduct ILS/PRM or LDA/PRM or RNAV (GPS) PRM approaches.

**4) Required and Recommended Training for ILS/PRM, LDA/PRM, and RNAV (GPS) PRM Approaches.** A foreign air carrier must include required training in its training program and the State of Operator must approve that training before the FAA may authorize either or both PRM approaches in OpSpec C052. Flightcrews must accomplish required ground training before conducting ILS/PRM or LDA/PRM or RNAV (GPS) PRM approaches.

a) Initial ground training—required.

1. This training must include all elements of the “Attention All Users Page” of an ILS/PRM or an LDA/PRM or an RNAV (GPS) PRM as authorized, along with viewing the latest version of the PRM video. (Contact FAA Flight Standards at 202-267-8166 for the most current version.)

NOTE: The FAA does not require flightcrews trained previously in PRM operations under earlier guidance to requalify with each new version of the PRM video.

2. The ground portion of the training program must support the following knowledge objectives. Each flightcrew member must:

a. Describe the PRM system to include the meaning of “no transgression zones.”

b. Know that an airplane on an adjacent approach path may be less than 4,300 ft away and may be flying at a different speed.

c. Know that the automated terminal information service (ATIS) broadcasts a pilot advisory when ILS/PRM, LDA/PRM or RNAV (GPS) PRM approaches are in progress.

d. Identify the differences between PRM approach charts and normal approach charts, including the special instruction pages for PRM.

e. Explain the unique communication requirements (equipment and procedures) for ILS/PRM, LDA/PRM, and RNAV (GPS) PRM approaches.

f. Know that an unpublished missed approach instruction that ATC may issue prior to published MAPs is called a “breakout.”

g. Know that a breakout may include instructions to descend and that the descent will be to no lower than the MVA for the sector. The MVA guarantees 1,000 ft above the highest obstruction in that sector. The rate of descent that controllers expect is not more than 1,000 ft per minute.

h. Know that a pilot must initiate a breakout maneuver manually and immediately upon hearing the “Traffic Alert” command from ATC, and that adequate separation requires that the pilot establish a 3-degree-per-second rate of turn within 8 seconds.

i. Know that the three areas (ATIS, Dual VHF Comm. Required, and All “Breakouts”) in the “Attention All Users Page” must be briefed (in flight) prior to conducting an ILS/PRM or an LDA/PRM or an RNAV (GPS) PRM approach.

j. Know that flightcrews may operate the TCAS in the TA/RA mode when conducting PRM approaches, including the following points:

- When an RA occurs with a concurrent ATC breakout command—follow the turn required in the ATC instructions; follow the climb or descent in the RA command (split commands);
- When an RA occurs without a concurrent ATC breakout command—follow the RA and contact ATC as soon as practical;
- TCAS provides only vertical resolution to aircraft conflicts; and
- An operative TCAS is not required for PRM operations.

k. Know procedures for SOIAs, including the following points:

- A visual segment of the LDA/PRM or the offset RNAV (GPS) PRM approach is established prior to the MAP to permit;
- Visual acquisition of the traffic to the parallel runway and advising ATC;
- Visual acquisition of the runway environment;
- LDA PRM or the offset RNAV (GPS) PRM course is maintained until the MAP. At the MAP, the pilot must have the parallel traffic in sight and the runway environment in sight, or fly the missed approach;
- At the MAP with the parallel traffic and the runway in sight, the pilot may continue to a landing;
- Maneuver to align with the RCL;
- Stabilize on glidepath no lower than 500 ft above TDZ; and
- Avoid wake turbulence from the parallel runway traffic.

3. Testing of these knowledge objectives is recommended.

b) Initial flight training—required.

c) Breakout maneuver—required.

NOTE: Initial breakout flight training must focus on the descending breakout.

NOTE: Air carriers who currently hold OpSpec approval to conduct PRM approaches have 12 months from the effective date of HBA 03-03 (05/29/03) to

initiate breakout flight training, and must complete training by the end of the next full training cycle.

NOTE: Air carriers applying for initial approval to conduct PRM approaches must complete breakout flight training by the end of the next full training cycle after receiving OpSpec approval.

NOTE: The FAA may authorize air carriers to conduct ILS/PRM, LDA/PRM or RNAV (GPS) PRM approaches. The FAA does not require duplicative flight training in the breakout maneuver (i.e., a breakout covered in flight training for ILS/PRM or LDA/PRM or RNAV (GPS) PRM satisfies the requirement).

NOTE: All air carriers who provide breakout training to flightcrews prior to the effective date of HBAT 03-03 (5/29/03) are not required to requalify.

NOTE: LDA/PRM approach. Recommended: ILS/PRM approach (if authorized on OpSpecs).

d) Recurrent ground training—required: Review of the ground training elements and the video in subparagraph E4)a) above and testing in those elements.

e) Recurrent flight training.

1. Required: None.

2. Recommended:

- ILS/PRM approach,
- LDA/PRM approach, and
- Breakout.

**5) Authorizing ILS/PRM Approaches, LDA/PRM Approaches, and RNAV (GPS) PRM Approaches for 14 CFR Part 129 Foreign Air Carriers.** A part 129 foreign air carrier operating in the United States may be authorized in OpSpec C052 to conduct ILS/PRM approaches, LDA/PRM approaches, and/or RNAV (GPS) PRM approaches if:

a) That foreign air carrier meets the ground and flight training requirements contained in subparagraphs J4)a) through c) above;

b) The CAA for the foreign air carrier authorizes these type approaches; and

c) The air carrier's POI determines that a point of contact (POC) for the foreign air carrier's CAA has been established in the foreign air carrier's OpSpec A006(c).

NOTE: A definition of RNAV (GPS) PRM has been added to the A002 template.

**OPSPEC C053 and C054. RESERVED.**

**OPSPEC C055. ALTERNATE AIRPORT IFR WEATHER MINIMUMS (OPTIONAL).**

**A. Applicability.** Paragraph C055 is an optional authorization available to all operators conducting airplane operations under 14 CFR part 129. The OpSpec is approved by the Administrator as an alternative method of calculating alternate minima to that specified in 14 CFR part 91, § 91.169(c). The OpSpec may be issued if the State of Operator has approved the foreign air carrier for this alternative method. The OpSpec must not be issued if the State of Operator has not approved the foreign air carrier for this alternative method. Without OpSpec C055, the foreign air carrier must comply with the highest minima of the State of Operator authorized method and § 91.169(c). The relevant International Civil Aviation Organization (ICAO) Annex 6 Part I, International Commercial Air Transport – Aeroplanes, standards are 4.3.4 and 4.3.5 with additional guidance in ICAO DOC 9976, Flight Planning and Fuel Management Manual. Paragraph C055 provides a two-part table from which the operator, during the initial dispatch or flight release planning segment of a flight, derives alternate airport IFR weather minimums in those cases where it has been determined that an alternate airport is required.

NOTE: Questions regarding the issuance of OpSpec/MSpec/LOA C055 should be directed to the Flight Technologies and Procedures Division (AFS-400) or the International Programs and Policy Division (AFS-50). If the PI directs questions to AFS-50, the PI should copy AFS-400 and vice versa.

**B. Airports With At Least One Operational Navigation Facility.** The first part of the table is for airports with at least 1 operational navigational facility providing a straight-in Nonprecision Approach (NPA) procedure, or a straight-in precision approach procedure, or, when applicable, a circling maneuver from an instrument approach procedure (IAP). The required ceiling and visibility is obtained by adding 400 feet (ft) to the minimum descent altitude/height (MDA/H) or, when applicable, the authorized decision altitude/height (DA/H) and by adding 1 statute mile (mi) or 1,600 meters (m) to the authorized landing minimum.

**C. Airports With At Least Two Operational Navigation Facilities.** The second part of the table is for airports with at least two operational navigational facilities, each providing a straight-in NPA procedure or a straight-in precision approach procedure to different suitable runways. The required ceiling and visibility is obtained by adding 200 ft to the higher MDA/H or DA/H of the two approaches used and by adding 1/2 mi or 800 m visibility to the higher authorized landing minimum of the two approaches used.

**D. Higher Alternate Minimums When Using Two Operational Navigation Facilities.** In some cases, it is possible to have higher alternate minimums when using two operational navigational facilities than when using one. For example, an airport with one straight-in NPA procedure with a MDA/H of 400 ft and 1 mi visibility would have alternate minimums of 800 ft and 2 mi visibility (400 ft + 400 ft and 1 mi + 1 mi). On the other hand, an airport with two straight-in approaches, one which is a straight-in precision approach with a DA/H of 200 ft and 1/2 mi visibility and the other a straight-in NPA with a MDA/H of 700 ft and 1 mi visibility, would have alternate minimums of 900 ft and 1 1/2 mi visibility (200 ft + 700 ft and 1/2 mi + 1 mi). Since the OpSpecs require that the operator use the higher ceiling and visibility, the minimums for the airport with two straight-in approaches are higher than for the

airport with only one straight-in approach. When this situation exists, the operator may elect to consider the airport as having only one straight-in approach procedure and may add the higher buffer requirement (400 ft and 1 mi) to whichever straight-in approach procedure provides for the lowest possible ceiling and visibility minimums.

**E. Using Two Different Runways.** Two different runways may be the different ends of the same physical runway surface (such as, runway 4 and runway 22 are two different runways). When determining the suitability of a runway, wind plus gust must be forecast to be within operating limits, including reduced visibility and runway contamination limits, and should be within the manufacturer's maximum demonstrated crosswind. The operator should also take into account any other potential runway limitations, such as Notices to Airmen (NOTAM) that may affect the landing at the estimated time of arrival (ETA).

**F. Credit for Alternate Minimums.** OpSpec C055 allows credit for alternate minimums for airports with a published Category (CAT) II or CAT III approach based on engine inoperative CAT II or CAT III capability. (See subparagraph I below for additional details.) Flightcrews having that capability may take credit for engine inoperative CAT II/III qualified aircraft and adjust minimums accordingly. The alternate minimums are based on CAT III engine inoperative requirements. The ceiling and visibility required for CAT II procedures is a ceiling of at least 300 ft and a visibility of at least RVR 4000, or for CAT III procedures, a ceiling of at least 200 ft height above touchdown (HAT), and a visibility of at least RVR 1800. Foreign air carriers having that capability may take credit for CAT II/III-qualified aircraft and adjust minimums accordingly. The alternate minimums are based on CAT III engine inoperative requirements.

1) The following are some but not all of those requirements. See the criteria in the current edition of Advisory Circular (AC) 120-28, Criteria for Approval of Category III Weather Minima for Takeoff, Landing, and Rollout—engine inoperative, for further requirements.

- a) The aircraft is capable of engine inoperative CAT III.
- b) The carrier has established appropriate procedures.
- c) Performance and obstruction clearance information has been provided to the flightcrew.
- d) Appropriate aircraft configuration, wind limits, and other appropriate information is provided to the flightcrew.

2) Before authorizing the additional selectable row(s) in Table 1 of the OpSpec, the principal operations inspector (POI) shall ensure through documentation that the foreign air carrier has provided that subparagraphs F1)a) through d) above are met and the air carrier's Civil Aviation Authority (CAA) authorizes it for CAT II/III alternate minimum. If the foreign air carrier does not meet the preceding conditions or equivalent conditions acceptable to the FAA, the PI must ensure that the issued OpSpec does not contain any additional rows in Table 1 (should only have two rows).

NOTE: The ICAO equivalent to AC 120-28 is ICAO DOC 9365/AN910, Manual of All-Weather Operations.

**G. Definition of “Two Operational Facilities.”** Question: “Does the FAA consider an ILS facility that contains a single transmitter frequency for an ILS, but with two different ILS identifications (depending on which runway is being used) as one or two navigational facilities?”

1) The words “two operational facilities” have always meant that in the event there is a single failure of one facility, the other would be operational. In the situation where both instrument landing system (ILS) facilities share a single transmitter, it would be considered “one operational navigational facility,” because both ILSs would become inoperative in the event of a single transmitter failure.

2) The two ILS identifiers would have to be different even though the ILS transmitter frequency is the same for both. The charts should tell pilots whether there is one frequency or two. Thus, one or two navigational facilities.

**H. Use of Area Navigation (RNAV) Global Positioning System (GPS) Minima at a Destination Alternate.** Pilots may plan to use any instrument approach authorized for use with wide area augmentation system (WAAS) avionics at a required alternate if the aircraft is suitably equipped with GPS WAAS equipment and the foreign air carrier is authorized to conduct Localizer Performance with Vertical Guidance (LPV) and/or Localizer Performance (LP) approach and landing operations by the State of Operator. When using WAAS at an alternate airport, flight planning must be based on flying the RNAV (GPS) lateral navigation (LNAV) minimums line, or minimums on a GPS approach procedure, or conventional approach procedure with “or GPS” in the title. Also, RNAV (GPS) (or RNAV Global Navigation Satellite System (GNSS)) are based on a single navigational facility when determining the approach facility configuration in Table 1 of the OpSpec, even if there are two or more RNAV (GPS) approaches to different suitable runways. Upon arrival at an alternate, when the WAAS navigation system indicates that LNAV/vertical navigation (VNAV) or LPV service is available, vertical guidance may be used to complete the approach using the displayed level of service. The FAA has begun removing the NA (alternate minimums not authorized) symbol from select RNAV (GPS) and GPS approach procedures so they may be used by approach approved WAAS receivers at alternate airports. Some approach procedures will still require the NA for other reasons (e.g., no weather reporting); therefore, it cannot be removed from all procedures. Because every procedure must be individually evaluated, removal of NA from RNAV (GPS) and GPS procedures will take some time.

**I. Selectable Text and Table 1.** There are two selectable rows which can be loaded into Table 1 of the OpSpec (Alternate Airport IFR Weather Minimums) and three selectable text options for additional limitation and provisions (subparagraph b(5) of the OpSpec).

1) **Table 1.** The two selectable rows in Table 1 authorize lower alternate minimums when planning to use either a CAT II or CAT III approach at the alternate airport. If a CAT II or CAT III credit is authorized, the first selectable text paragraph must be loaded as well.

**2) Selectable Text Options.** Selectable text options for additional limitation and provisions (subparagraph b(5) of the OpSpec): The first selectable text option states requirements for CAT II and CAT III credit applicable to alternate airport flight planning, and must be loaded if the operator is authorized the CAT II or CAT III credit described in subparagraph I) above. The second selectable text option authorizes operators equipped with WAAS to use GPS approaches when determining an alternate, and lists the restrictions associated with using GPS approaches in alternate planning. The third selectable text option authorizes both (the air carrier is authorized CAT II or III and GPS/WAAS alternate minimums.)

NOTE: Prior to issuing C055 to the foreign air carrier, principal inspectors (PI) must ensure that the appropriate selectable text option is selected, if applicable. If none of the selectable text options apply, the PI must ensure that none of the selectable text options are selected.

### **OPSPEC C056. IFR TAKEOFF MINIMUMS—AIRPLANES (OPTIONAL).**

**A. General.** The FAA issues OpSpec C056 to foreign air carriers who conduct operations under IFR with airplanes to the United States. This OpSpec contains guidance regarding pilots, aircraft, and airports when lower minimums than those defined in 14 CFR part 91, § 91.175(f), hereinafter referred to as standard takeoff minimums, are used. OpSpec C056 lists the lowest Runway Visual Range (RVR) in feet based on the authorized airplane type.

**B. Inspector Action/Web-based Operations Safety System (WebOPSS) Entry.** When issuing OpSpec C056, the principal operations inspector (POI) must select in the table in subparagraph b of the OpSpec the following:

1) No lower than the lowest State of the Operator Authorized RVR for each airplane type to be used to fly to the U.S.

NOTE: Regardless of the particular authorizations of a foreign carrier the POI may not authorize minima lower than RVR 300/300/300.

2) The free text box to manually enter the appropriate Head Up Display (HUD) for each type of aircraft to be used to fly to the U.S. or select N/A if HUD is not authorized by the State of the Operator.

3) Any additional limitations and provisions not specified in the OpSpec and applicable to the lowest RVR for the type of aircraft to be used.

4) Additionally, the POI must select:

a) The static text in subparagraphs c(3) and e of the OpSpec if the foreign air carrier is operating airplanes with a seating configuration of 30 seats or less or a maximum payload capacity of 7,500 pounds or less.

b) The radio button specifying the limitations and requirements applicable to the lowest RVR value selected in the table in subparagraph b) of the OpSpec. (For a summary see Table 12-4B below).

**Table 12-4B. Runway Equipment Requirements for Takeoff Minima**

| <b>Runway Visual Aid Required</b>   | <b>Lowest Allowable Takeoff Minimum Authorization</b><br>[visibility or RVR (TDZ/Mid/Rollout)]   |
|---|--|
| Adequate visual reference,<br><i>or</i><br>Any <i>one</i> of the following: <ul style="list-style-type: none"> <li>• Centerline (CL) lighting</li> <li>• High Intensity Runway Light (HIRL)</li> <li>• Runway centerline marking (RCLM)</li> </ul>  | RVR not available;<br>1/4 mile (mi) (500 meters (m)); or<br>RVR 1600 feet (ft) (500 m)/Not Required/Not Required. (Mid-point can substitute for an unavailable touchdown). |
| <b>Note:</b> Below RVR 1600, two operating RVR sensors are required. All operating RVR sensors are controlling (except per the note below for far-end sensors). Extremely long runways (e.g., Denver International Airport (DEN) 16R) utilize four RVR sensors (i.e., TDZ, mid, rollout, and far-end). When a fourth far-end RVR value is reported, it is not controlling and is not to be used as one of the two required operative RVR sensors. Visual aids (CL lighting, RCLM) must be visible (for example not obstructed by snow). |  |
| Day: CL lighting or HIRL or RCLM<br>Night: CL lighting or HIRL  | RVR 1200 ft (350 m)/1200 ft (350 m)/1000 ft (300 m)  |
| RCLM and HIRL, or CL lighting   | RVR 1000 ft/1000 ft/1000 ft (300 m)  |
| HIRL and CL lighting  | RVR 600 ft/600 ft/600 ft (175 m) or<br>RVR 500 ft/500 ft/500 ft (150 m)  |
| With an approved HUD takeoff guidance system, HIRL, and CL lighting   | RVR 300 ft/300 ft/300 ft (75 m)  |
| <b>Note:</b> Additionally, RVR 300 ft/300 ft/300 ft (75 m) takeoff is conducted on a runway with a published landing minimum of RVR 300 and localizer front course guidance displayed on the HUD.   |  |

**OPSPEC C057. DECOMMISSIONED.**

**OPSPEC C059. CATEGORY II INSTRUMENT APPROACH AND LANDING OPERATIONS (OPTIONAL).**

**A. Conditions for Approval.** Category (CAT) II operations are approved by issuance of OpSpec C059 to foreign air carriers for 14 CFR part 129 operations. Before the FAA issues OpSpec C059, each foreign air carrier and each airplane type used by that foreign air carrier require approval by the State of Operator.

**B. Evaluation.** CAT II operations are evaluated for approval in accordance with the following:

1) The current edition of advisory circular (AC) 120-29, Criteria for Approval of Category I and Category II Weather Minima for Approach..

2) Volume 4, Chapter 2.

3) For foreign-registered airplanes, a Lower Landing Minimums (LLM) maintenance program approved by the State of Operator and for U.S.-registered airplanes, an LLM maintenance program approved by the FAA in accordance with Volume 4, Chapter 2, Section 11, in coordination with the principal avionics inspectors (PAI) and principal maintenance inspectors (PMI).

4) Approval of the State of Operator is also required before amending OpSpec/MSpec/LOA C059 to include an airplane make, model, and series (M/M/S) new to the foreign air carrier.

**C. Approved Airplanes.** Each airplane type (M/M/S) used in CAT II operations must be listed in Table 1 of C059 (see Table 12-5, Example Category II Approach and Landing Minimums, for example) and have an acceptable LLM maintenance program approved by the State of Operator and, in the case of U.S.-registered airplanes, it must be approved by the FAA in accordance with part 129, § 129.14. The lowest decision height (DH) and lowest Runway Visual Range (RVR) authorized for each airplane type must also be specified. The example in Table 3-17 illustrates the method for authorizing each airplane in OpSpec/MSpec/LOA C059:

**Table 12-5. Example Category II Approach and Landing Minimums (Sample Table 1)**

| <b>CAT II Approach and Landing Minimums</b> |                         |                              |
|---|-------------------------|------------------------------|
| <b>Airplane M/M/S</b>                       | <b>DH Not Less Than</b> | <b>Lowest Authorized RVR</b> |
| DOUG DC9 31                                 | 100 ft                  | 1600 RVR                     |
| BOEING 727 217                              | 100 ft                  | 1600 RVR                     |
| AIRBUS 300 A300B4103                        | 100 ft                  | 1200 RVR                     |
| BOEING 757-200                              | 100 ft                  | 1200 RVR                     |
| LKHEED 1011 385114                          | 100 ft                  | 1200 RVR                     |
| DHC-8-402                                   | 100 ft                  | 1000 RVR                     |
| BOEING 737-700                              | 100 ft                  | 1000 RVR                     |
| BOEING 777-200                              | 100 ft                  | 1000 RVR                     |

**D. Required CAT II Airborne Equipment.** The equipment required to conduct manually flown or automatically flown CAT II operations is specified in Table 2 of OpSpec C059 (see Table 12-6, Example of CAT II Items of Equipment (Sample Table 2)) for each airplane M/M/S. The equipment required is established in accordance with the applicable regulations, the approved Aircraft Flight Manual (AFM) (if applicable), and AC 120-29. There are two acceptable methods of demonstrating that an airplane is airworthy for CAT II operations. These acceptable methods are “type design approval,” obtained by a manufacturer or Special

Type Certification (STC) holder, or an “operational demonstration,” conducted by the foreign air carrier.

**1) Type Design Approval.** The approved AFM (or flight manual supplement), for airplanes that have CAT II type design approval, contains a statement that the airborne systems have demonstrated the reliability and redundancy necessary for CAT II operations in accordance with AC 120-29. AFMs also specify that certain equipment is required for airworthiness approval of the various kinds of CAT II operations. Some AFMs also indicate that acceptable CAT II performance was demonstrated both with, and without, certain equipment (e.g., “autothrottles with or without”). AC 120-29 also specifies that certain types of equipment are required for operational approval of the various kinds of CAT II operations (manual/autopilot). Therefore, both the approved AFM and AC 120-29 must be considered in determining if the additional equipment requirement must be listed (specified) in Table 2 of OpSpec C059. The illustration below shows how the additional or required equipment should be listed in Table 2 of OpSpec C059.

a) Equipment that is explicitly required by the airplane certification regulations (14 CFR parts 23 and 25, or the foreign equivalent), the operating regulations (14 CFR parts 91 and 129) and/or the approved AFM should not be listed in Table 2. The standard text of C059 requires this equipment to be functional. Therefore, the additional equipment or operational requirement that must be listed (specified) in OpSpec C059 is determined by cross-checking the type of equipment required by AC 120-29 for the kinds of CAT II operations proposed against the equipment required by regulations and the approved AFM.

b) Enter into Table 12-6 the additional equipment for the M/M/S and kind(s) of CAT II operations authorized. Do not include equipment explicitly required by regulations and/or the AFM (e.g., autoland for B-747 operations below RVR 1600). Do include additional equipment required in any of the following: AC 120-29, an STC, an Aircraft Flight Manual Supplement (AFMS), the current edition of Order 8400.13, Procedures for the Evaluation and Approval of Facilities for Special Authorization Category I Operations and All Category II and III Operations.

c) When the AFM indicates acceptable performance either with or without certain items of equipment (which are not explicitly required by AC 120-29), it must be determined how the foreign air carrier intends to conduct CAT II operations and train flightcrews with those items of equipment. If the foreign air carrier proposes to conduct operations either with or without certain items of equipment (such as autothrottle, autopilot), flightcrews must be trained for both situations and the item of equipment does not need to be listed in Table 2 of OpSpec C059.

**2) Operational Demonstration.** This method is used when equipment eligibility is not stated in the AFM, the AFMS, or the Flight Standardization Board (FSB) report. The operational demonstration method is only appropriate for airplanes and equipment that do not have CAT II type design approval. The operational demonstration must be conducted in accordance with AC 120-29. A part 129 foreign air carrier should request that its responsible Flight Standards District Office (FSDO)/International Field Office (IFO)/International Field Unit (IFU) provide assistance in the eligibility assessment.

a) The foreign air carrier should provide the responsible FSDO/IFO/IFU with the aircraft make, model, and serial number, any evidence of instrument flight rules (IFR) approach approval, and pertinent information from flightcrew operating procedures.

b) For U.S.-registered aircraft, if the responsible FSDO/IFO/IFU is unable to determine equipment eligibility from the approved documentation, it should forward the request and supporting data through its FAA regional Flight Standards division (RFS) to the appropriate Aircraft Evaluation Group (AEG). The AEG will verify that the aircraft and its landing system meet the criteria for CAT II operations, and that the system can safely fly the CAT II approach procedures. The AEG will provide written documentation (e.g., amended FSB report or other official documentation) to verify the eligibility of that equipment.

c) For foreign-registered aircraft, the foreign air carrier should forward the request and supporting data to the appropriate State Civil Aviation Authority (CAA) to verify eligibility of equipment.

**E. Table 2 Guidelines.** The kind of CAT II operation (manual head-up display (HUD), and/or autopilot) must be specified for each item of equipment listed in Table 2 of OpSpec C059. The following guidelines should be followed for filling out Table 2:

1) CAT II equipment required by the regulations or the approved AFM should not be listed.

2) The required airborne equipment table combines the manual HUD and autopilot columns into one column for programming purposes. The POI will select the appropriate phrase: manual HUD, or autopilot.

3) If an item of equipment is applicable to a specific airplane's M/M/S for both manual HUD and autopilot CAT II operations, both manual HUD and autopilot can be highlighted and selected for insertion into the column.

4) The equipment required for RVR 1000 CAT II authorization is to be listed in the "Additional Equipment" column.

5) See Table 12-6 below for examples of how the items of equipment should be specified for the kind of CAT II operation.

**Table 12-6. Example of Category II Items of Equipment (Sample Table 2)**

| <b>Kind of CAT II Operation</b>                     |   |  |
|---|---|--|
| <b>Airplane<br/>(Make/Model/Series<br/>(M/M/S))</b> | <b>Additional Equipment<br/>&amp; Special Provisions</b>        | <b>Manual Head-Up<br/>Display (HUD)/<br/>Autopilot</b> |
| Boeing 767 219                                      | 1. Approach coupler and flight director (FD) must be operative. | autopilot  |
| Boeing 757-232                                      | 1. An independent FD and display for                            | autopilot  |

|                 |   |  |
|-----------------|---|--|
|                 | each pilot (L and R or C and R).                          |  |
| Boeing 737-200  | None- Approved Flight Manual (AFM) guidance.              | Manual Head-Up-Guidance System (HGS) or<br>autopilot |
| NIHON YSII A200 | Approved Flight Manual Supplement (AFMS) dated 3/26/2003. | autopilot  |

**F. Airplane Maintenance.** For CAT II authorization, the foreign air carrier must have an acceptable LLM maintenance program.

1) For U.S.-registered airplanes, this LLM maintenance program shall be in accordance with Volume 4, Chapter 2, Section 3, and must be approved by the FAA in accordance with § 129.14. This LLM maintenance program should be coordinated with the principal Airworthiness inspectors and PAIs.

2) For foreign-registered airplanes, this LLM maintenance program shall be approved by the State of Operator.

**G. Flightcrew Qualifications.** Flightcrews are trained and checked in accordance with the foreign air carrier's approved training program for CAT II operations authorized with a DH of 100 ft and RVR 1,000 ft (300 m), and these minimums are approved by the State of Operator. If the flightcrew is currently authorized CAT III operations, no further training is required for this authorization in C059.

**H. Authorized CAT II Approach and Landing Minimums.** To determine the applicable minima for an approach, the pilot must first compare the DH shown on the 14 CFR part 97 approach chart with the foreign air carrier's lowest authorized DH for the airplane being flown. The higher number is used. Then, the RVR to be used for the approach is the highest RVR value shown in the approach chart, Table 1 of the OpSpec or subparagraph g. of the OpSpec, considering RVR sensor reports available.

**I. Authorized CAT II Approaches, Airports, and Runways.**

1) If the airport and runways are approved for CAT II operations in part 97, they should not be routinely listed in OpSpec C059 unless the POI determines there is a need to specify a special limitation for foreign air carriers at a particular airport.

a) Standard CAT II approaches are published in the National Aeronautical Charting Office (NACO) instrument approach procedures (IAP) flight information publication as CAT II procedures. They are identified by the procedure name "ILS RWY 16C (CAT II)" and by the note in the minima section stating "CATEGORY II ILS - SPECIAL AIRCREW & AIRCRAFT CERTIFICATION REQUIRED."

b) Reduced lighting CAT II approaches are published by NACO with the same identifiers as standard CAT II approaches, but they also have a note in the Procedure Notes section stating, "Procedure does not meet ICAO standard for Approach Lighting System With

ALSF/TDZ/CL lighting systems. Requires specific OPSPEC, MSPEC or LOA approval. Requires Autoland or HUD to touchdown.”

**2) Standard CAT II.** The foreign air carriers may be authorized up to three different minima for use with published 14 CFR part 97 approaches, 1600 RVR, 1200 RVR, and 1000 RVR. Allowable minima depend on availability of RVR sensors and availability and use of required airplane equipment.

a) 1600 RVR (touchdown zone (TDZ) RVR only) and 1200 RVR (TDZ and one other RVR) minima require the flightcrew to use an approach coupler or to fly under manual control using a HUD for flight guidance at least to DH. A manually flown landing is assumed and need not be specified.

b) 1000 RVR (TDZ RVR and one other RVR) minima requires the flightcrew to use autoland or to fly under manual control using a HUD to touchdown.

1. For operations to touchdown, the airplane and its automatic flight control guidance system (AFCGS), or manually flown guidance system, are approved for approach and landing operations as specified by AC 120-29.

2. For manual control using a HUD to touchdown, the HUD must be flown in a CAT III mode.

c) Foreign air carriers authorized reduced lighting CAT II as described in subparagraph I.3) below may also be authorized to conduct approaches to standard CAT II facilities when the TDZ and/or centerline (CL) lights are inoperative. They must comply with all requirements in subparagraph I.2), using minima appropriate to the RVR available and using autoland or manual HUD to touchdown.

**3) Reduced Lighting CAT II.** In addition to the standard CAT II operations authorized by OpSpec C059, reduced lighting CAT II operations can be authorized to qualifying runways that do not meet the performance or equipment requirements normally associated with a compliant CAT II operation (e.g., TDZ lighting, CL lighting, or Approach Lighting System With Sequenced Flashing Lights (ALSF)-1 & 2).

a) Approval criteria for reduced lighting CAT II approaches are given in FAA Order 8400.13, where they are described as CAT II Approach Operations on Type I ILS facilities. These Type I facilities are CAT I ILS installations that meet the glideslope (GS) and localizer signal quality requirements of CAT II facilities. The reduced lighting requirements are mitigated by the required increase in aircraft capabilities (i.e., HUD and/or autoland).

b) RVR requirements and available minima are the same as standard CAT II, 1600 RVR (TDZ RVR only) and 1200 RVR (TDZ and one other RVR), but these minima require the flightcrew to use autoland or to fly under manual control using a HUD to touchdown.

c) Aircraft operational approval, HUD usage and flightcrew training requirements are the same as for standard CAT II to 1000 RVR.

4) The lists restricted U.S. facilities approved for CAT 2-3 operations and U.S. runways approved for CAT II on Type I operations can be found on the Flight Operations Branch (AFS-410) Web site at [http://www.faa.gov/about/office\\_org/headquarters\\_offices/avs/offices/afs/afs400/afs410/status\\_lists/](http://www.faa.gov/about/office_org/headquarters_offices/avs/offices/afs/afs400/afs410/status_lists/).

**J. Missed Approach Requirements.** The missed approach decision point has been changed from 1,000 feet (ft) above touchdown to the final approach fix (FAF). After passing the FAF, if the required visual landing references are not acquired, and any failure of required equipment occurs, or if the primary guidance system in use (autopilot or HUD) is disengaged for any reason, the flightcrew must execute the missed approach. The exception to this requirement is that if both guidance systems are properly briefed and engaged before reaching the FAF and one system is disengaged or fails after the FAF, the remaining guidance system is considered the primary and the approach may be continued.

**K. CAT II Runway Restrictions.** The requirement to conduct automatic landings in reduced lighting and 1000 RVR operations implies that autoland restrictions imposed by pre-threshold terrain must be considered. Approaches that have pre-threshold terrain problems will have a note on the approach chart requiring a special autoland evaluation. Approved runways will be on the AFS-410 Web site.

**OPSPEC C060. CATEGORY III INSTRUMENT APPROACH AND LANDING OPERATIONS (OPTIONAL).** The FAA evaluates Category (CAT) III operations in accordance with the current edition of Advisory Circular (AC) 120-28, Criteria for Approval of CAT III Landing Weather Minima for Takeoff, Landing, and Rollout, equivalent European Aviation Safety Agency (EASA) criteria, or the International Civil Aviation Organization (ICAO) DOC 9365/AN910, Manual of All Weather Operations. The FAA authorizes CAT III operations by issuing OpSpec C060. Each airplane type make, model, and serial (M/M/S) used in CAT III operations must be listed in OpSpec C060 subparagraph a along with the Decision Height (DH)/Alert Height (AH), lowest Runway Visual Range (RVR) authorized, and runway field length factor for the type of CAT III operation authorized. Foreign air carriers requesting authorization for CAT III at U.S. airports should meet the following criteria.

**A. Acceptable Criteria.** Criteria acceptable for use for assessment of foreign air carrier's applications for CAT III at U.S. airports include AC 120-28, equivalent EASA criteria, or the ICAO Manual of All Weather Operations DOC 9365/AN910. Foreign air carriers previously approved by the FAA in accordance with earlier criteria may continue to apply those earlier criteria. Foreign air carriers seeking credit for operations addressed only by the current edition of AC 120-28 (e.g., CAT III head-up display (HUD) operations) must meet the criteria of this AC, or equivalent criteria acceptable to the FAA, for those applicable provisions.

**B. Foreign Air Carrier Aircraft Flight Manual (AFM) Provisions.** Unless the FAA authorizes otherwise, aircraft used by foreign air carriers for CAT III within the United States should have AFM provisions reflecting an appropriate level of CAT III capability as demonstrated to or authorized by the FAA, or demonstrated to or authorized by a civil aviation authority (CAA) recognized by the FAA, as having acceptable equivalent CAT III airworthiness criteria (e.g., EASA, Canada Minister of Transportation (MOT), UK CAA).

**C. Foreign Air Carrier CAT III Demonstrations.** Foreign air carriers meeting FAA criteria, or criteria acceptable to the FAA (e.g., EASA, ICAO criteria including Doc. 9365/AN910), and having more than 6 months experience in the use of CAT III operations with the applicable aircraft type may be approved for CAT III in accordance with the provisions of their own CAA, or in accordance with the standard provisions of OpSpec C060, whichever is the more restrictive. The FAA does not require a separate demonstration period if the foreign air carrier's CAA does not require it. However, foreign air carriers authorized in accordance with this provision may nonetheless be subject to additional FAA demonstration for special situations, such as at airports with irregular underlying terrain (see subparagraph D below), or for aircraft types not having flown to U.S. facilities having CAT III procedures. For foreign air carriers having current U.S. CAT III authorization, the CAT III demonstration period may be reduced or waived for the addition of a new type aircraft to the existing CAT III authority. The demonstration period may be reduced or waived to the extent that the FAA has accepted a successful demonstration for that aircraft type for any other U.S. or foreign air carrier. Foreign air carriers not meeting the above provisions may be subject to the demonstration described in paragraphs 10.5.2 and 10.9 of the current edition of AC 120-28 (equivalent to those necessary for U.S. operators) as the FAA determines applicable.

**D. Issuance of 14 CFR Part 129 OpSpecs.** If a foreign air carrier operating to U.S. airports meets the above applicable provisions, the FAA authorizes that air carrier for CAT III by issuing OpSpec C060. Air Carriers intending CAT III operations at U.S.-designated irregular terrain airports, or airports otherwise requiring special assessments, must successfully complete those assessments before using those facilities.

**E. Use of Certain Restricted U.S. Facilities.**

1) Foreign air carriers typically use CAT III procedures in the United States that are available as unrestricted public use procedures. However, the FAA may also authorize certain restricted public use procedures and special CAT III approach procedures for non-U.S. operators. Typically, these procedures require special airborne equipment capability, special training, or nonstandard facility and obstacle assessments. The CAT II/III status checklist identifies these special procedures. They are not usually published as a 14 CFR part 97 CAT III Standard Instrument Approach Procedure (SIAP). Foreign air carriers may be eligible to use certain of these procedures if they meet the same special criteria as would apply to a U.S. operator, and if their own CAA approves them specifically for the use of the procedure. Some procedures may not be eligible for foreign air carriers because of other applicable restrictions such as a restriction placed on private facility use. Special or restricted procedures require both FAA authorization and specific authorization from the foreign air carrier's CAA for each procedure. This is to ensure that both the operator and foreign CAA are aware of the special provisions needed, and to ensure equivalent safety to use of standard ICAO criteria. Each foreign air carrier seeking CAT III procedure authorization at a facility not published as a standard and unrestricted CAT III SIAP, or at any other facilities that the FAA CAT II/III status checklist identifies as special or restricted, and that carrier's CAA must:

- a) Be aware of the restrictions applicable to the procedure (e.g., facility status),

b) Provide evidence to FAA of the CAA's approval of the foreign air carrier for each special procedure requested, and

c) Must have the applicable limitations and conditions included in that air carrier's OpSpecs for each procedure to be used.

2) Foreign air carriers shall not normally be authorized special CAT III operations to minima lower than those specified in part 97 CAT III SIAPs consistent with ICAO criteria. If special instrument approach procedures (IAP) other than those specified in part 97 are authorized, paragraph C381 shall also be issued.

**F. Type of CAT III Operation.** The type of CAT III landing system and rollout control system (fail-passive and/or fail-operational) must be specified for each airplane type in OpSpec C060, Table 1. This is accomplished by selecting the type of operation from the select data screen in the automated Operations Safety System (OPSS). Selections available are NA=Not applicable; FP=Fail Passive, or FO=Fail Operational.

**G. DH/AH and Lowest RVR.** In Table 1, enter the DH/AH and lowest authorized RVR that the State of Operator has authorized for each airplane M/M/S and type of CAT III operation.

**H. Field Length Factor Required.** Runway field length factor is used in determining the required runway field length for CAT III operations and is multiplied times the runway field length required by State of Operator performance regulations or ICAO Annex 6 performance requirements, whichever are more restrictive.

1) OpSpec C060 Table 1 must specify the runway field length factor required for the various kinds of CAT III operations for each airplane. For operations with a controlling RVR at or above 600 feet (ft) the required field length is 1.15 times the field length required by the previously cited regulations, or AFM as appropriate.

2) For a precision instrument approach and landing with a controlling RVR below 600 ft, the required field length is either 1.15 or 1.3 times the field length required by the previously cited regulations depending on the operational procedures and/or additional equipment the operator uses or AFM, as appropriate.

**I. Special Operational Equipment and Limitations.** OpSpec C060 subparagraph a Table 1 should not list equipment that the airplane certification regulations (14 CFR parts 23 and 25 or foreign equivalent if foreign-registered), the operating regulations of 14 CFR, and/or the approved AFM explicitly require. The "Special Operational Equipment and Limitations" column is provided for equipment that is in addition to that required by regulation and not included in the AFM. For example, additional equipment may be required if a field length factor of 1.15 is used in operations below RVR 600 where a procedural means alone is not acceptable (see AC 120-28). For foreign air carriers that have CAT III approval, copy the airplane M/M/S, rollout control system (e.g., FP or FO), the DH/AH, and lowest authorized RVR for each rollout control system into Table 1. Determine the field length factor as described above (e.g., 1.3 or 1.15) and copy special operational equipment and limitations noted in the air carrier's current OpSpec C060, if any, and insert that information into Table 1 of the new

OpSpec. If the operator does not need special operational equipment, put “NA” under the appropriate column. Do not delete or leave any cells blank.

NOTE: Only include that equipment which is not explicitly required by the regulations and/or the Airplane Flight Manual.

#### **J. Authorized CAT III Airports and Runways.**

1) All airports and runways to which a foreign air carrier is authorized to conduct CAT III instrument approach and landing operations need to be entered in Table 2, along with any required limitations.

2) CAT II/III status lists. The lists contain information concerning U.S. airports/runways approved for CAT II and CAT III instrument landing system (ILS) operations. The CAT II/III status list will be published semi-annually on January 31 and July 31. The CAT III lists in Sections 3, 4, and 7 replace the information in FAA Order 8400.8, Procedures for the Approval of Facilities for FAR Part 121 and Part 135 Cat III Operations, appendix 4.

**OPSPEC C063.** Please see Volume 3, Chapter 18, Section 4.

**OPSPEC C064. DECOMMISSIONED.**

#### **OPSPEC C065. POWERBACK OPERATIONS WITH AIRPLANES (OPTIONAL).**

OpSpec C065 authorizes the use of powerplant reversing systems for rearward taxi operations. Before issuing OpSpec C065, the foreign air carrier must provide documentation to enable the principal operations inspector (POI) to determine whether the carrier has established procedures for powerback operations that its civil aviation authority (CAA) has accepted/approved. Airplane types make, model, and series (M/M/S) authorized for powerback operations must be listed in OpSpec C065. Airports where powerback operations are authorized must also be listed. If the POI and/or foreign air carrier determine that restrictions to powerback operations are required at certain gates or ramp areas, the restrictions must be described (adjacent to the airport name) in the “Restrictions and Limitations” column.

#### **OPSPEC C067. SPECIAL AUTHORIZATIONS, PROVISIONS, AND LIMITATIONS FOR CERTAIN AIRPORTS (required for all foreign air carriers).**

**A. General.** OpSpec C067 authorizes and limits the foreign air carrier’s operation of airplanes into certain airports. These authorizations and limitations include the following types of operations:

- Foreign air carriers conducting certain passenger-carrying operations into uncertificated airports (see subparagraph C),
- Foreign air carriers conducting operations at airports that require curfew limitations for flights into or out of specific airports (see subparagraph D),
- Foreign air carriers conducting operations into airports that because of operational considerations may require special aircraft performance charts and equipment, special lighting (flare pots, etc.), or unpaved runways (see subparagraph D), and

- Foreign air carriers conducting operations using the Reginald Bennett International (RBI) Runway Reflectorization System in Alaska (see subparagraph D2).

## **B. Authorizations Where Other OpSpecs Are Applicable.**

1) OpSpec C050 for “special PIC qualification airports” is applicable for the airport if contained on the List of Special Pilot In Command Qualifications Airports at the Flight Standards Information Management System (FSIMS) <http://fsims.faa.gov>, Publications, Operations Safety System (OPSS) Documents, Operations Safety System (OPSS) Guidance. Do not list those airports in OpSpec C067 unless one of the items in subparagraph A also applies.

2) Use OpSpec C381 for listing the airports/runways where the Flight Technologies and Procedures Division (AFS-400) has approved specific “special” instrument procedures for a foreign air carrier.

3) OpSpec C064 and C080 are applicable for authorizing a foreign air carrier to conduct airplane operations in airport terminal areas in Class G airspace or at airports without an operating control tower.

**C. Uncertificated Airports.** Title 49 of the United States Code (49 U.S.C.) § 44706, and 14 CFR part 121, § 121.590 impose restrictions on U.S. carriers operating certain types of passenger-carrying operations into U.S. land airports that are not certified under 14 CFR part 139 and allow for authorization for such operations by the FAA. OpSpec C067 imposes the same restrictions for foreign air carriers operating to U.S. land airports under 14 CFR part 129 and makes allowances for certain authorizations.

1) Limitations on the use of uncertificated U.S. land airports by passenger-carrying airplanes in OpSpec C067 are designed to mirror the requirements of § 121.590.

2) In accordance with the requirements of OpSpec C067, a foreign air carrier may be authorized to conduct passenger-carrying airplane operations into an airport (military and nonmilitary) operated by the U.S. Government that is not certificated under part 139 if those airports to be used meet:

- The equivalent safety standards for airports certificated under part 139, and
- The equivalent airport classification requirements under part 139 to serve the type of airplanes to be operated and the type of operations to be conducted.

3) Inspectors may grant authorization to serve such airports by entering the location/identifier of each airport, and the make, model, and series (M/M/S) of the airplanes to be operated in Table 1, provided the State of Operator civil aviation authority (CAA) has also approved/accepted the operation.

4) Operators should obtain permission from the airport manager of nonmilitary airports and the base commander of military airports to operate at these airports before starting operations.

5) This permission is not needed for operations at joint-use civil and military airports.

#### **D. Other Special Authorizations.**

1) Other special authorizations, limitations, and provisions include those operations that would require special operational considerations and special flightcrew member training if operations were conducted by a U.S. carrier. (See guidance in Volume 4, Chapter 3, Section 5.) Each of these operations must also be approved/accepted by the State of Operator CAA. These may include but are not limited to:

- Operations into airports with special runway markings, such as flare pots or trees;
- High altitude airports with special airplane performance requirements; and
- Airports with unpaved runways or runways constructed on frozen lakes and rivers.

2) Special authorization for conducting operations at airports in Alaska. For authorization to conduct airplane operations using the RBI Runway Reflectorization System in Alaska:

a) The air carrier must provide a station agent at the airport trained to give wind information to the flightcrew, and

b) The air carrier must train its flightcrews on this specific system in accordance with an approved training program. The training program must be approved in accordance with the following criteria:

1. Each pilot must receive initial and recurrent training in accordance with their company's training program approved by the State of Operator's CAA.

2. Each person must complete initial training (both ground and flight personnel) prior to his or her participation with this authorization.

3. Recurrent training must be completed within each subsequent 12 calendar-months.

4. Whenever a person who is required to take this recurrent training completes the training in the calendar-month before or the calendar-month after the month in which this recurrent training is required, that person is considered to have completed it in the calendar-month in which it was required.

5. The sample Table 1 (Table 12-7, Sample of Table 1 Airports and Special Provisions) shows how to provide authorization for conducting operations after curfew hours at specific airports or use of the RBI Runway Reflectorization system at specific airports in Table 1 of OpSpec C067.

3) Foreign air carrier turbojet operations on unpaved runways. Airports with unpaved runways shall be required to have special operational procedures and flightcrew member training approved/accepted as appropriate by the State of Operator CAA. For authorization of operations at an airport with unpaved runways, the principal operations inspector (POI) must identify the airport and reference the appropriate section of the foreign air carrier's manuals in Table 1 of OpSpec C067.

4) Foreign air carrier operations to U.S. airports that do not have an available alternate in accordance with Annex 6, Part I, Paragraph 4.3.4.3 (b) that are dispatched in accordance with the required fuel reserves set forth in Annex 6, Part I, Paragraph 4.3.6.3.2 (b), shall be listed along with any special provisions or limitations, including those imposed by the foreign CAA.

5) Although the FAA does not encourage operators to list in their OpSpecs aircraft limitations at certain airports during curfew hours, if an airport authority requires operators to list these limitations in their OpSpecs, then operators may list them in Table 1 of OpSpec C067. A sample of Table 1 (Table 12-7) below shows an example of limitations for air carrier operations into specific airports during curfew hours.

**Table 12-7. Sample of Table 1 Airports and Special Provisions**

| <b>Airport Location/Identifier</b>             | <b>Aircraft Make, Model, and Series (M/M/S) (enter "NA" if not applicable)</b> | <b>Special Provisions and Limitations and Special Flightcrew Member Training</b>  |
|--|--|---|
| PKEK, Ekwok, Alaska                            | NA   | A station agent is required to give wind information to the flightcrews and the flightcrew must have completed the required approved training on the Reginald Bennett International (RBI) Runway ReflectORIZATION System. |
| DCA, Ronald Reagan Washington National Airport | Boeing 737-800   | Limitations during the curfew hours.<br>Boeing 737-800—Max Takeoff—159,000 pounds<br>Max Landing—137,600 pounds.  |

**OPSPEC C068. NOISE ABATEMENT DEPARTURE PROFILES (NADP) (OPTIONAL).**

**A. The Intent of OpSpec C068.** OpSpec C068 authorizes foreign air carriers to conduct Noise Abatement Departure Profile (NADP) operations in accordance with the provisions of OpSpec C068 and the procedures in the foreign air carrier's manuals that its civil aviation authority (CAA) has accepted/approved. The foreign air carrier shall use the approved NADPs for its turbojet airplanes, having a maximum certificated gross takeoff weight (GTOW) of more than 75,000 pounds, operating from a noise-sensitive airport within the United States. The foreign air carrier shall conduct each NADP in accordance with the restrictions and limitations specified in OpSpec C068 and shall not conduct any other noise abatement departure profile operations.

1) For the purpose of these OpSpecs, the NADPs for any airplane type at any one time shall be limited to a maximum of two profiles:

- Close-In NADP operations, and/or
- Distant NADP operations.

2) Only one NADP can be designated for each runway at each airport. The foreign air carrier's NADPs must meet the following criteria:

a) For each NADP, the foreign air carrier shall specify the altitude above field elevation (AFE) at which flightcrews will initiate thrust reduction from takeoff thrust (close-in profile) or airplane configuration change (distant profile), excluding gear retraction.

b) Close-In NADP. The foreign air carrier shall use the following NADP criteria for individual airplane types intended to provide noise reduction for noise-sensitive areas located in close proximity to the departure end of the runway:

1. Initiate thrust cutback at an altitude of no less than 800 feet (ft) AFE and prior to initiation of flaps or slats retraction.

2. The thrust cutback may be made by manual throttle reduction or by approved automatic means. Flightcrews may arm the automatic means before takeoff for cutback at or above 800 ft AFE or may be pilot initiated at or above 800 ft AFE.

3. For airplanes without an operational automatic thrust restoration system, achieve and maintain no less than the thrust level necessary after thrust reduction to maintain, for the flaps/slats configuration of the airplane, the takeoff path engine-inoperative climb gradients specified in 14 CFR part 25, § 25.111(c)(3) in the event of an engine failure.

4. For airplanes with an operational automatic thrust restoration system, achieve and maintain no less than the thrust level necessary after thrust reduction to maintain, for the flaps/slats configuration of the airplane, a takeoff path engine-inoperative climb gradient of zero percent, provided that the automatic thrust restoration system will, at a minimum, restore sufficient thrust to maintain the takeoff path engine-inoperative climb gradients that § 25.111(c)(3) specifies in the event of an engine failure.

5. During the thrust reduction, coordinate the pitchover rate and thrust reduction to provide a decrease in pitch consistent with allowing indicated airspeed to decay to no more than 5 knots below the all-engine target climb speed, and in no case to less than takeoff safety speed (multi) ( $V_2$ ) for the airplane configuration. For automated throttle systems, acceptable speed tolerances can be found in the current edition of Advisory Circular (AC) 25-15, Approval of Flight Management Systems in Transport Category Airplanes.

6. Maintain the speed and thrust criteria as described in steps A2)b)3 through A2)b)5 to 3,000 ft AFE or above, or until the airplane has been fully transitioned to the en route climb configuration (whichever occurs first), then transition to normal en route climb procedures.

c) Distant NADP. The foreign air carrier shall use the following NADP criteria for individual airplane types intended to provide noise reduction for all other noise sensitive areas.

1. Initiate flaps/slats retraction prior to thrust cutback initiation. Flightcrews should initiate thrust cutback at an altitude no less than 800 ft AFE.

2. Flightcrews may make the thrust cutback by manual throttle reduction or by approved automatic means. Flightcrews may arm the automatic means prior to takeoff for cutback at or above 800 ft AFE or the flightcrew may initiate it at or above 800 ft AFE.

3. For airplanes without an operational automatic thrust restoration system, achieve and maintain no less than the thrust level necessary after thrust reduction to maintain, for the flaps/slats configuration of the airplane, the takeoff path engine-inoperative climb gradients specified in § 25.111(c)(3) in the event of an engine failure.

4. For airplanes with an operational automatic thrust restoration system, achieve and maintain no less than the thrust level necessary after thrust reduction to maintain, for the flaps/slats configuration of the airplane, a takeoff path engine-inoperative climb gradient of zero percent, provided that the automatic thrust restoration system will, at a minimum, restore sufficient thrust to maintain the takeoff path engine-inoperative climb gradients specified in § 25.111(c)(3) in the event of an engine failure.

5. During the thrust reduction, coordinate the pitchover rate and thrust reduction to provide a decrease in pitch consistent with allowing indicated airspeed to decay to no more than five knots below the all-engine target climb speed, and in no case to less than  $V_2$  for the airplane configuration. For automatic throttle systems, acceptable speed tolerances can be found in AC 25-15.

6. Maintain the speed and thrust criteria as described in steps A2)c)3 through A2)c)5 to 3,000 ft AFE or above, or until the airplane has been fully transitioned to the en route climb configuration (whichever occurs first), then transition to normal en route climb procedures.

**B. Airplane Vertical Departure Profiles.** Before authorizing this paragraph, the POI must ensure that all airplane vertical departure profiles described in the certificate holder's operations and/or training manuals comply with the above criteria before authorizing OpSpec C068 for the foreign air carrier.

NOTE: Configuration changes necessary to meet regulatory performance or operations requirements shall not be affected by this procedure. For those airplanes that have a performance requirement to reduce takeoff flaps to an intermediate takeoff flap setting at 400 ft AFE or above, the next flap/slats retraction should be initiated at an altitude of no less than 800 ft AFE.

**OPSPEC C069-C074. RESERVED.**

**OPSPEC C075. CIRCLING MANEUVERS AND/OR CONTACT APPROACHES AT U.S. AIRPORTS (OPTIONAL).**

**A. Issuing OpSpec C075.** The FAA issues OpSpec C075 to foreign air carriers with fixed-wing airplanes who conduct either circling maneuvers, contact approaches, or both (circling maneuvers and contact approaches). OpSpec C075 specifies the lowest minimums that can be used.

NOTE: Do not issue OpSpec C075 if the foreign air carrier is not authorized for either the circling maneuver or contact approach.

**B. Before Issuing OpSpec C075.** The foreign air carrier must submit documentation showing that their crewmember training program approved by their Civil Aviation Authority (CAA) provides the appropriate training and checking, and that the CAA authorized the maneuver and/or approach.

**C. Drafting OpSpec C075.** Within the OpSpec there are two sets of selectable static text for circling maneuvers and contact approaches (one for each when authorized, and one for each when not authorized). The inspector must select the appropriate text based on what the air carrier is authorized. For example, if the air carrier is authorized for circling maneuvers and not for contact approaches, then select the text that states the limitations of circling maneuvers and the “not authorized” text for contact approaches.

**D. Circling Maneuvers Terminology.** In any weather condition, a foreign air carrier that permits its pilots to accept a “circle to land” or a “circle to runway (runway number)” clearance from air traffic control (ATC) conducts circle-to-land maneuvers. The term “circle-to-land maneuver” includes the maneuver that is referenced in various regulations, publications, and documents as “circle-to-land maneuver,” “circling,” “circling maneuver,” “circle,” “circling approach,” and “circling approach maneuver.” With regard to pilots, conducting a circle-to-land maneuver means to act as the Pilot Flying (PF) when a circle-to-land maneuver is being conducted.

**E. Aircraft Operating Under Instrument Flight Rules (IFR) During All Circle-To-Land Maneuvers.** Aircraft operating under IFR during all circle-to-land maneuvers are required to remain clear of clouds. If a flightcrew loses visual reference to the airport while conducting a circle-to-land maneuver, they must follow the missed approach procedure specified for the applicable instrument approach, unless ATC specifies an alternate missed approach procedure.

**F. Circling Landing Maneuver.** When the ceiling is less than 1,000 feet and visibility is less than 3 statute miles, then the foreign air carrier shall not use any circling landing minimum lower than that prescribed for the applicable published instrument approach to be used.

NOTE: This does not authorize the pilots to go below the lowest minimum authorized by the State of Operator.

**G. Pilots Restricted to Circling in Visual Conditions.** Any pilot who possesses a pilot certificate restricting circling approaches to visual meteorological conditions (VMC) is not eligible to conduct circle-to-land maneuvers except as provided below:

1) He or she must use the higher of the minimum descent altitude (MDA) of 1,000 feet height above airport (HAA) or the MDA of the published circling landing minimums for the instrument approach to be used.

2) He or she remains under an IFR clearance and must comply with the procedures otherwise required for circle-to-land maneuvers. The foreign air carrier may conduct a circle-to-land maneuver when the reported ceiling is at least 1,000 feet and the visibility is at least 3 miles, or the reported weather is at least equal to the published circling landing minimums for the instrument approach to be used, whichever is higher.

NOTE: Foreign air carriers conducting circle-to-land maneuvers without training and checking are subject to the same provisions as pilots restricted to circling in visual conditions.

**H. Contact Approach Criteria.** The Aeronautical Information Publication (AIP) of the United States provides further guidance on foreign operators operating contact approaches in the United States. See Part 2—En Route (ENR), ENR 1.1, paragraph 42.3 and ENR 1.5, paragraph 23 of the AIP of the United States, located at the following Web site: [http://www.faa.gov/air\\_traffic/publications/atpubs/AIP/aip.pdf](http://www.faa.gov/air_traffic/publications/atpubs/AIP/aip.pdf).

#### **OPSPEC C076. DECOMMISSIONED.**

#### **OPSPEC C077. TERMINAL FLIGHT RULES LIMITATIONS AND PROVISIONS (required for all carriers conducting IFR operations).**

**A. To Whom OpSpec C077 is Issued.** The FAA issues OpSpec C077 to all foreign air carriers operating turbojet and large airplanes to the United States. Except as provided within OpSpec C077, it restricts all operations to those conducted to instrument flight rules (IFR) except in accordance with the provisions of 14 CFR part 93, Special Federal Aviation Regulation (SFAR) 50-2, SFAR 71, or OpSpec B051, if issued. OpSpec C077 allows the foreign air carrier to conduct the following operations in the terminal area with the restrictions and limitations listed therein:

- 1) Terminal arrival IFR—visual approach or a charted visual flight procedure (CVFP).
- 2) Terminal arrival visual flight rules (VFR).
- 3) Terminal departures VFR.
- 4) Terminal departures IFR.

**B. CVFP.** For a foreign air carrier conducting a CVFP, the weather minimums of 14 CFR part 91 prevail except that the carrier shall not use minimums lower than those established in the CVFP.

**C. OpSpec C077 Subparagraph b(2)(b)—Uncontrolled Airports.** Uncontrolled airports may be in Class G airspace. In order for the foreign air carrier to exercise this provision, OpSpecs C064 and/or C080 must also be issued allowing operation at airports without an operating control tower and/or operation in Class G airspace.

**D. OpSpec C077 Subparagraph b(3).** In lieu of a CVFP, a charted visual procedure that the air carrier's civil aviation authority (CAA) approved is highly recommended for all terminal VFR departures/arrivals that fall under this OpSpec. The proximity of obstacles to the departure flightpath, the seeing conditions, the accuracy of the guidance and control systems, the pilot's proficiency, and the foreign air carrier's training should determine the size of the area in which obstacle clearance or avoidance must be considered.

**E. OpSpec C077 Subparagraph c(3).** This subparagraph contains a requirement to obtain an IFR clearance no farther than 50 nautical miles (NM) from the departure airport. However, it is recognized that this procedure may not be practical in all situations. If a greater distance is necessary, the foreign air carrier may apply for a nonstandard paragraph. If OpSpec B051 is issued for VFR en route operations, then for propeller-driven aircraft, except for certain en route VFR provisions in part 93, SFAR 50-2, or SFAR 71, the flightcrew may depart VFR under the provision of OpSpec C077 subparagraph c, and the requirement to obtain an IFR clearance en route does not apply.

**F. Terminal Departure IFR Requirements in Subparagraph d.** If air traffic control (ATC) clears the flight, it is acceptable to execute a visual meteorological conditions (VMC) takeoff and climb to a specified point in the clearance as part of an IFR clearance. However, the foreign air carrier must ensure that the obstacle performance requirements are met. Further, the flight must not depart on a VFR flight plan if the capability to go on an IFR flight plan is evident.

**G. Subparagraph e.** Subparagraph e provides special limitations and provisions for all VFR operations. This subparagraph is applicable to all the provisions and limitations of OpSpec C077.

**1) Subparagraph e(1).** In order for the foreign air carrier to conduct VFR operations under OpSpec C077, they must have in place either a procedure or program that can identify obstacles and the airport obstacle data. Further, they must ensure that the flightcrew use that information. The POI shall request documentation from the foreign air carrier that this program is in place and that the air carrier's CAA has approved VFR terminal operations.

**2) OpSpec C077, Subparagraph e(2).** Although each subparagraph has specific details and minimums regarding VFR, the requirement for sufficient seeing conditions to identify and avoid obstacles is required for all VFR operations.

**OPSPEC C078. RESERVED.**

**OPSPEC C080. TERMINAL AREA IFR OPERATIONS IN CLASS G AIRSPACE AND AT AIRPORTS WITHOUT AN OPERATING CONTROL TOWER (OPTIONAL).** The FAA issues OpSpec C080 to authorize a foreign air carrier to conduct terminal area airplane instrument flight rules (IFR) operations in Class G airspace or at airports without an operating control tower.

**A. Before Authorizing OpSpec C080.** Before authorizing OpSpec C080, the principal operations inspector (POI) must determine that the foreign air carrier's civil aviation authority (CAA) has authorized/approved it for these types of operations. The foreign air carrier must provide documentation to the POI showing that they have the required methods or procedures and arrangements in place for obtaining and disseminating necessary operational information and that their CAA has accepted/approved them. This operational information must include the following:

- 1) That the airport is served by an authorized instrument approach procedure (IAP) (and departure procedure, when applicable).
- 2) Applicable charts for crewmember use.
- 3) Operational weather data from an approved source for control of flight movements and crewmember use. (For a list of examples, see Volume 3, Chapter 26, Section 4. Note that the examples contained therein are not all inclusive.)
- 4) Status of airport services and facilities at the time of the operation.
- 5) Suitable means for pilots to obtain traffic advisories (TA).
- 6) Sources of traffic and airport advisories.
- 7) Scheduled passenger operations. The POI must select the optional text for scheduled operations. The optional text specifies the following additional requirement: would it not have been for weather, or mechanical or air traffic control (ATC) delays, the flight would have arrived at the scheduled time and the airspace would have been Class D.

**B. Sources of Traffic and Airport Advisories.** Foreign air carriers may be authorized to use any two-way radio source of air TA information listed in the Aeronautical Information Manual (AIM) (for operations in U.S. airspace) or equivalent Aeronautical Information Publications (AIP).

- 1) These sources include common traffic advisory frequencies (CTAF), Aeronautical Advisory Stations (UNICOM), Multicom, and Flight Service Stations (FSS).
- 2) In those cases where two sources are listed at the same airport, inspectors must ensure that the foreign air carrier's manuals have procedures that require pilots to continuously monitor and use the TA frequency when operating within 10 nautical miles (NM) of the airport. The procedures should require communication concerning airport services and facilities to be completed while more than 10 NM from the airport.

3) At some airports, no public use frequencies may be available. In those cases, a foreign air carrier must arrange for radio communication of essential information, including surveillance of local or transient aircraft operations by ground personnel. Ground personnel who provide airport status and TA reports using a company radio must be able to view airspace around the airport.

**OPSPEC C381. RESERVED.**

**OPSPEC C083. IASA CATEGORY 2 SPECIAL OPERATIONAL RESTRICTIONS—SCHEDULED AND NON-SCHEDULED OPERATIONS, ADDITIONAL AIRCRAFT AND SPECIAL AUTHORIZATIONS (required for all carriers from International Aviation Safety Assessment (IASA) CAT II countries).**

**A. General.** OpSpec C083 shall be issued to any foreign air carrier conducting operations to the United States under 14 CFR part 129, when the FAA determines under the international aviation safety assessment program (IASA) that the State of Operator does not oversee civil aviation safety in accordance with minimum international standards. Such countries are placed in IASA Category 2. Foreign air carriers with existing operations to the United States will be permitted to continue operations at current levels under heightened FAA surveillance. The FAA does not permit expansion or changes in services to the United States by such carriers while their home country is in Category 2 status. The FAA will permit new services only if operated using aircraft wet-leased from a duly authorized and properly supervised U.S. carrier or a foreign air carrier from a Category 1 country that is authorized to serve the United States using its own aircraft under part 129. Those operations are not restricted by this OpSpec. Issuance of OpSpec C083 shall be coordinated with the International Programs and Policy Division (AFS-50). If no operations were conducted to the United States in the 6 calendar-months prior to the month in which their home country was determined to be Category 2, the responsible FSDO/IFO/IFU should begin the process of withdrawing the carrier's part 129 OpSpecs instead of issuing this paragraph. That process should only begin after consultation with AFS-50.

**B. Scheduled Operations.** In order to maintain operations at current levels for these carriers, each foreign airport from which the foreign air carrier provides scheduled service to the United States shall be listed in OpSpec C083 subparagraph a. The foreign air carrier must have provided scheduled service to the listed city pairs either at the time their home country was determined to be Category 2, or during the 6 calendar-months prior to the month their home country was determined to be Category 2. The foreign air carrier shall also be limited to the frequency operated to those city pairs during the 6 calendar-months prior to the CAT 2 determination. OpSpec C083 limits the foreign air carrier's scheduled operations to the United States to those city pairs and frequency. If the carrier's home country once again obtains IASA Category 1 status, this OpSpec will be withdrawn.

**C. Nonscheduled Operations.** When a foreign air carrier's home country is determined to be in IASA Category 2, the FAA restricts the foreign air carrier's nonscheduled operations to the geographic areas to which operations were conducted and frequency of operation during the 6 calendar-months prior to the Category 2 determination. Each U.S. geographic area to which the foreign air carrier provides nonscheduled service to the United States and the frequency of that nonscheduled service over the preceding 6 months shall be listed in the table in subparagraph b.

If the carrier's home country once again obtains IASA Category 1 status, this OpSpec will be withdrawn. The applicable geographic areas are only those that also are listed in OpSpec A001. To list the areas of geographic authorization, accomplish the following:

1) First, obtain the "list of areas of en route operation." The Web-based Operations Safety System (WebOPSS) guidance subsystem contains detailed information on geographical areas. The areas authorized for issuance to a foreign air carrier in 129 OpSpecs are:

- USA—The 48 Contiguous United States and the District of Columbia,
- USA—The State of Alaska,
- USA—The State of Alaska; the Following Islands [insert],
- USA—The State of Hawaii,
- USA—The State of Hawaii; the Following Islands [insert],
- USA—The States of [insert], and
- USA—The Territory of [insert].

2) Then select the individual areas of en route operations to be authorized.

a) Certain selections have blank spaces, which when selected must be completed. These selections should normally be used only when the operation is to be limited to certain states, or islands within a larger geographic area. For example, a foreign air carrier may have its nonscheduled operations limited to Hawaii and other specific island(s) and territories within the region of the South Pacific Ocean, such as Guam and Samoa, if that carrier provided nonscheduled service to the area during the prior 6 months. While these types of selections provide two or three blank spaces, as many states or islands as appropriate can be entered.

b) If the standard phraseology for a particular selection is not appropriate, the principal operations inspector (POI) may develop an appropriate description of the area to be authorized. In these cases, the POI can delete the standard phraseology and insert the nonstandard description of the geographic area.

**Figure 12-3. Example Listing of Restrictions for a Foreign Air Carrier**

**A. Scheduled Operations.** The foreign air carrier shall only conduct scheduled operations to and from the United States between the specific city pairs listed in this paragraph.

| UNITED STATES CITY     | FOREIGN COUNTRY CITY | FREQUENCY      |
|------------------------|----------------------|----------------|
| PANC Anchorage, Alaska | XXXX anywhere city   | Twice per week |

**B. Nonscheduled Operations.** The foreign air carrier's nonscheduled operations to and from the United States is restricted to the U.S. geographic area and frequency listed in this paragraph.

| UNITED STATES GEOGRAPHIC AREA                                    | FREQUENCY          |
|--|--------------------|
| USA—The 48 Contiguous United States and the District of Columbia | 6 flights per year |

**D. Additional Aircraft.** On or after the date their home country was determined to be CAT 2, no additional aircraft (including substitution of aircraft) may be added to the carrier's OpSpecs, except through the issuance of OpSpec A028 allowing aircraft wet-leased from a duly authorized and properly supervised U.S. carrier or foreign air carrier from a CAT 1 country that is authorized to serve the United States using its own aircraft.

**E. Special Authorizations.** On or after the date their home country was determined to be CAT 2, no additional special authorizations such as Category (CAT) II/III, instrument landing system (ILS)/precision runway monitor (PRM), land-and-hold-short operations (LAHSO), Reduced Vertical Separation Minimum (RVSM), etc., that require approval, acceptance or authorization by the foreign air carrier's Civil Aviation Authority (CAA), shall be authorized in these OpSpecs, unless such authorizations are necessary in the interest of safety, and shall be issued only with the concurrence, in writing, of AFS-50. Any existing special authorizations such as CAT II/III, ILS/PRM, LAHSO, RVSM, etc., that require an initial approval, acceptance, or authorization and continuing oversight by the foreign air carrier's CAA, shall be reviewed to determine that adequate oversight by the foreign air carrier's CAA is occurring on a continuous basis. If it is determined that such adequate oversight by the foreign air carrier's CAA is not occurring on a continuous basis, the responsible FSDO/IFO/IFU should consider withdrawing those special authorizations from the foreign air carrier's OpSpecs. That withdrawal process should be initiated only after consultation with and clearance by AFS-50.

NOTE: Additional information on the FAA's IASA program, including a country's IASA category, can be obtained on the FAA Web site at <http://www.faa.gov/about/initiatives/iasa/>.

**OPSPEC C084-C090. RESERVED.**

## **OPSPEC C381. SPECIAL NON-14 CFR PART 97 INSTRUMENT APPROACH OR DEPARTURE PROCEDURES (OPTIONAL).**

**NOTE:** To obtain the nonstandard authorization C381, the operator is required to use the nonstandard request process. See Volume 3, Chapter 18, Section 2, paragraphs 3-712 to 3-713, for the nonstandard request process. For foreign air carriers conducting operations under 14 CFR part 129, submit the formal request to the Flight Technologies and Procedures Division (AFS-400).

**A. Applicability.** OpSpec C381 is applicable to all foreign air carriers conducting airplane operations under part 129. OpSpec C381 authorizes foreign air carriers to conduct special (non-14 CFR part 97) instrument approach procedures (IAP) or departure procedures (DPs). OpSpec C381 is an optional authorization for foreign air carriers conducting operations under part 129.

**B. Authorization.** The foreign air carrier's training program must provide training in the equipment and special procedures to be used, and the foreign air carrier's civil aviation authority (CAA) must approve the use of these special procedures. The carrier must be from an international aviation safety assessment program (IASA) Category 1 State. OpSpec C381 can be issued once the inspector determines that the foreign air carrier is able to obtain the operational status of the non-part 97 instrument approach or departure operations.

1) All airports and all special IAPs and DPs must be listed in Table 1 of OpSpec C381. The full name of the procedure (e.g., "ILS or LOC/DME RWY 23, Amdt 2") must be included in the table. Include any limitations or provisions relevant to a specific procedure in the third column of Table 1.

2) When submitting the formal request to AFS-400 in accordance with the nonstandard request process, include the draft OpSpec and the approval documentation from the foreign air carrier's CAA. AFS-400 will review the technical content, and forward the request to AFS-50 for approval.

**C. Special Terminal IAPs or DPs.** For more information on special instrument procedures, see Volume 4, Chapter 2, Section 10, or contact your regional AXX-220 branch for more information.

## **OPSPEC C384. AREA NAVIGATION (RNAV) REQUIRED NAVIGATION PERFORMANCE (RNP) INSTRUMENT APPROACH PROCEDURES WITH SPECIAL AIRCRAFT AND AIRCREW AUTHORIZATION REQUIRED (AR).**

**A. General.** OpSpec C384 is used to authorize foreign air carriers to conduct Area Navigation (RNAV) Required Navigation Performance (RNP) instrument approach procedures (IAP), which require special aircraft and aircrew authorization required (SAAAR). These approaches have been published in accordance with 14 CFR part 97 and are charted as "RNAV (RNP) RWY XX," hereinafter referred to as RNP SAAAR IAP.

**B. Alternative Method.** The current edition of FAA advisory circular (AC) 90-101, Approval Guidance for RNP Procedures with Special Aircraft and Aircrew Authorization

Required (SAAAR), provides an acceptable method of compliance with public RNP SAAAR IAP requirements. In lieu of following this method without deviation, foreign air carriers may elect to follow an alternative method, provided the alternative method is also found to be acceptable to the FAA.

**C. RNP Approaches.** RNP approaches provide an opportunity to improve safety, efficiency, and capacity. Safety is improved when RNP approaches replace visual or Nonprecision Approaches (NPA), and efficiency is improved through more repeatable and optimum flightpaths. Capacity can be improved by de-conflicting traffic during instrument conditions.

1) RNP SAAAR approaches provide an unprecedented flexibility in construction of approach procedures. These operations are RNAV procedures with a specified level of performance and capability. RNP SAAAR approach procedures build upon the performance-based National Airspace System (NAS) concept. The performance requirements to conduct an approach are defined, and aircraft are qualified against these performance requirements. Obstacle evaluation areas for approaches using conventional navigation aids are based on a predefined aircraft capability and navigation system. RNP SAAAR criteria for obstacle evaluation are flexible and designed to adapt to unique operational environments. This allows approach-specific performance requirements as necessary for that approach procedure. The operational requirement can include avoiding terrain or obstacles, deconflicting airspace, or resolving environmental constraints.

2) RNP approaches include unique capabilities that require special aircraft and aircrew authorization similar to Category (CAT) II/III instrument landing system (ILS) operations. All RNP SAAAR approaches have reduced lateral obstacle evaluation areas and vertical obstacle clearance surfaces predicated on the aircraft and aircrew performance requirements of AC 90-101. In addition, there are two characteristics used for selected procedures, as necessary. Foreign air carriers can be authorized for any subset of these characteristics:

- Aircraft ability to fly a published arc (also referred to as a radius to a fix (RF) leg); and
- Reduced lateral obstacle evaluation area on the missed approach (also referred to as a missed approach requiring RNP less than 1.0).

3) When conducting an RNP SAAAR approach using a line of minima less than RNP 0.3 and/or a missed approach that requires RNP less than 1.0, you must comply with AC 90-101, appendix 2, paragraph 5 and/or 6.

4) The defining components of RNP capability is the ability of the aircraft navigation system to monitor its achieved navigation performance and to identify, display, and alert the pilot when the operational requirement is not being met during an operation.

## **D. Authorization.**

**1) Overview.** Any foreign air carrier with an appropriate operational authorization (e.g., OpSpecs) may conduct specified RNP SAAAR IAPs, with a process similar to when foreign air carriers with the proper authorization may conduct CAT II and CAT III ILS operations. Subparagraph D3b) (Figure 12-4, RNP SAAAR Authorization Checklist—(Refer to AC 90-101 for current edition)) contains a checklist and a list of the documents foreign air carriers must submit to their assigned principal inspectors (PI) when seeking FAA authorization for these operations. Foreign air carriers should comply with the requirements in AC 90-101, appendices 2 through 6. Before application, foreign air carriers and manufacturers should review all performance requirements. Installation of equipment by itself does not guarantee final approval for use.

### **2) Aircraft Qualification and Initial Acceptance of Recommended Operational Documentation.**

a) Aircraft Qualification Documentation. Aircraft manufacturers should develop aircraft qualification documentation showing compliance with AC 90-101, appendix 2. This documentation identifies the optional capabilities (e.g., RF legs and RNP missed approaches), the RNP capability of each aircraft configuration, and the characteristics that may alleviate the need for operational mitigations. This documentation should also define the recommended RNP maintenance procedures.

b) RNP SAAAR Operational Documentation. The FAA recommends that the aircraft manufacturer develop RNP SAAAR operational documentation. The operational documentation consists of a recommended navigation data validation program (Refer to AC 90-101, appendix 3) and operational considerations (Refer to AC 90-101, appendix 4), training programs (Refer to AC 90-101, appendix 5), and RNP monitoring programs (Refer to AC 90-101, appendix 6).

c) FAA Acceptance.

1. For new aircraft, the aircraft qualification documentation can be approved as part of an aircraft certification project and reflected in the Approved Flight Manual (AFM) and related documents. The RNP SAAAR operational documentation can be accepted by the Aircraft Evaluation Group (AEG) in coordination with the Flight Technologies and Procedures Division (AFS-400).

2. For existing aircraft, the aircraft manufacturer should submit the aircraft qualification and RNP SAAAR operational documentation to AFS-400. AFS-400 will coordinate with other FAA offices and may accept the package as appropriate for RNP SAAAR operations. Acceptance will be documented in a letter to the aircraft manufacturer.

### **3) Operator Authorization.**

a) Procedures. Foreign air carriers must present a package of documentary evidence to their PIs at their responsible Flight Standards District Office (FSDO)/International Field Office (IFO)/International Field Unit (IFU) showing compliance with the requirements

below, in accordance with AC 90-101, appendices 2 through 6, which is specific to the aircraft, equipment, and their procedures. Once the principal operations inspector (POI) has made a determination in cooperation with the principal avionics inspector (PAI) and principal maintenance inspector (PMI) that the package is satisfactory and complete, the package shall be forwarded to AFS-400 for review and concurrence. Once AFS-400 concurrence has been obtained that the operator has satisfied the requirements contained in AC 90-101, or equivalent, the POI issues OpSpec C384, authorizing RNP SAAAR IAPs. An RNP SAAAR authorization checklist has been provided on the following pages for use.

b) RNP SAAAR Application Package Contents. The operator submits documentation of its proposed operation to its responsible FSDO/IFO/IFU. The package should include, as a minimum, the following:

1. Aircraft qualification documentation. Documentation from the aircraft manufacturer showing that the proposed aircraft equipment meets the requirements as outlined in AC 90-101, appendix 2. This documentation should contain any specific hardware or software equipment requirements, procedural requirements, and limitations.

2. Type of aircraft and description of aircraft equipment to be used. Provide a configuration list that details pertinent components and equipment to be used for the operation. The list should include each make, model, and version of flight management system (FMS) software installed.

3. Operating procedures and practices. Company manuals and checklists must adequately address the special characteristics of a proposed area of operation and the operational (navigation) practices and procedures identified in AC 90-101, appendix 4. These procedures shall be included as part of the manual required by International Civil Aviation Organization (ICAO) Annex 6, Part I, paragraph 4.2.3, which is approved/accepted by the State of Operator Civil Aviation Authority (CAA).

4. Navigation data validation program. The foreign air carrier must provide the specifics of the navigation data validation program as described in AC 90-101, appendix 3. The program will be included in the manual required by ICAO Annex 6, Part I, paragraph 4.2 that is approved/accepted by the State of Operator CAA.

5. Flightcrew and flight operations officer/flight dispatcher training programs. Foreign air carriers must submit training syllabi and other appropriate material to show that RNP SAAAR operations are incorporated into their programs. Training programs must adequately address the special characteristics of a proposed area of operation and the operational (navigation) practices and procedures identified in AC 90-101, appendix 5. The training and qualification program must be approved by the State of Operator CAA.

6. Maintenance program. The operator should submit maintenance program procedures that include instructions for airworthiness/maintenance of the equipment/systems to be used in the operation and required training for maintenance personnel. The foreign air carrier must provide a procedure for removing the aircraft from and returning the aircraft to RNP SAAAR operational capability. The program must be approved by the State of Operator CAA.

Additionally, for each U.S.-registered aircraft, the FAA must approve the maintenance program in accordance with part 14 CFR part 129, § 129.14.

7. RNP SAAAR approach monitoring program. The foreign air carrier must submit a program that collects data on RNP SAAAR procedures conducted. Each operation should be recorded; unsuccessful attempts should include the factors that prevented successful completion of the operation.

8. Minimum equipment list (MEL). The operator must revise its MEL as necessary for the conduct of the operation in accordance with AC 90-101, appendix 4, paragraph 2a and submit the foreign CAA-approved revision. Additionally, for U.S.-registered aircraft, the foreign air carrier must submit the MEL revision for approval to the FAA in accordance with § 129.14.

9. Validation. The foreign air carrier must submit documentary evidence that the State of Operator CAA has approved/accepted its U.S. RNP SAAAR IAP operations in accordance with the criteria in AC 90-101 without deviation, including validation testing. If the foreign air carrier's RNP SAAAR IAP operations have been approved/accepted using other criteria, the criteria used must be submitted to the FAA POI. When the foreign air carriers use an alternative method other than strict compliance with the requirements of AC 90-101, the foreign air carrier's package will be forwarded to AFS-400 for review and concurrence before authorization is granted. Validation testing should include:

- Demonstration of the aircraft capability to perform RNP procedures with AR,
- The carrier's operational and dispatch procedures,
- The effectiveness of the carrier's training,
- The effectiveness of the equipment maintenance procedures, and
- MEL procedures

NOTE: Validation testing should take advantage of ground training devices (GTD), simulators, and aircraft demonstrations. If the demonstration will be conducted in an aircraft, it must be completed in day visual meteorological conditions (VMC).

NOTE: Demonstration may be required in each make, model, and version of FMS software installed.

**Figure 12-4. RNP SAAAR Authorization Checklist—(Refer to AC 90-101 for Current Version)**

| <b>RNP SAAAR Authorization CHECKLIST</b>   |                          |
|--|--------------------------|
| Date Application Submitted: _____  |                          |
| Aircraft Qualification   | <input type="checkbox"/> |
| Navigation Data Validation Program   | <input type="checkbox"/> |
| Established Maintenance Procedures   | <input type="checkbox"/> |
| Training (e.g., flightcrew/dispatch)   | <input type="checkbox"/> |
| Minimum equipment list (MEL) Revision (as required)  | <input type="checkbox"/> |
| Operational Procedures Requirements  | <input type="checkbox"/> |
| Required Navigation Performance (RNP) monitoring program   | <input type="checkbox"/> |
| Conditions or Limitations for approval   | <input type="checkbox"/> |
| Dispatch/flight following procedures   | <input type="checkbox"/> |
| Validation successfully completed (as required)  | <input type="checkbox"/> |
| <b>POI ACTION:</b>   |                          |
| AFS-400 Concurrence  | <input type="checkbox"/> |
| Interim RNP special aircraft and aircrew authorization required (SAAAR) Approval (issue 14 CFR part 129 OpSpecs) | <input type="checkbox"/> |
| Final RNP SAAAR Approval (issue part 129 OpSpecs)  | <input type="checkbox"/> |
| RNP SAAAR Disapproval  | <input type="checkbox"/> |
| Reason for Disapproval:<br>_____   |                          |
| Date: _____  |                          |
| POI Signature: _____   |                          |

c) Interim Authorization. For the first 90 days and at least 100 SAAAR approaches in each aircraft type, the foreign air carrier will be authorized to conduct RNP approaches with SAAAR using minima associated with RNP 0.3. For approach procedures with no line of minima associated with RNP 0.3, the procedure must be flown in VMC. The interim authorization will be removed after completion of the applicable time period and number of approaches and upon FAA review of the reports from the RNP SAAAR monitoring program.

NOTE: RNP SAAAR foreign air carrier with experience of equivalent RNP approaches may receive credit toward the interim authorization requirements.

NOTE: Experienced RNP SAAAR foreign air carriers operating new or upgraded aircraft types/systems, derivative types, or different aircraft types with identical crew interface and procedures, may use reduced interim authorization periods (e.g., fewer than 90 days and 100 approaches) as determined by the POI with written concurrence from AFS-400.

NOTE: In unique situations where the completion of 100 successful approaches could take an unreasonably long period of time due to factors such as a small number of aircraft in the fleet, limited opportunity to use runways having appropriate procedures, and where or when equivalent reliability can be achieved, a reduction in the required number of approaches may be considered on a case-by-case basis by the POI with written concurrence from AFS-400.

d) Final Authorization. The responsible FSDO/IFO/IFU will issue OpSpec C384, authorizing use of lowest applicable minima after the foreign air carrier satisfactorily complete their initial 90-day/100-RNP SAAAR approach demonstration period.

e) Aircraft Modification. If any aircraft system required for RNP SAAAR is modified (e.g., software or hardware change), the aircraft modification must be evaluated. The foreign air carrier must obtain a new FAA authorization, supported by the manufacturer's updated aircraft qualification and operational documentation.

#### **E. Inspector Action to Complete OpSpec C384.**

1) OpSpec C384 identifies each make, model, and series (M/M/S) of aircraft, equipment, limitations, and lowest authorized RNP the foreign air carrier is authorized to use when conducting RNP SAAAR IAP operations within the United States.

2) All aircraft information must be first entered into the Web-based automated Operations Safety System (WebOPSS) in the left navigation area, under CHDO > Maintain Operator Data > Aircraft.

a) From the dropdown in Table 1 of the OpSpec, under the column "Aircraft M/M/S" select an aircraft M/M/S. Use the "+" symbol to add additional rows. Repeat for each authorized aircraft.

b) Enter navigation system make/model and software version. The specific make and model of navigation equipment including the current software version installed on each associate aircraft M/M/S must be entered in the column labeled "Enter Navigation System M/M/S and Software Version" of Table 1.

c) Enter limitations in the column labeled "Limitations." If there are no limitations, then select "None" from the dropdown; do not leave blank. Enter all applicable limitations as follows:

"Not authorized to use temperature compensation system. Enter this limitation unless the aircraft has temperature compensation in accordance with AC 90-101,

appendix 2, paragraph 3a(7), and the foreign air carrier provides pilot training on the use of the temperature compensation function.

“Not authorized procedures requiring radius to fix RF. Enter this limitation if the aircraft/navigation system does not have RF leg capability.

“Not authorized procedures with missed approaches requiring RNP less than 1.0. Enter this limitation when the aircraft/navigation system does not meet AC 90-101, appendix 2 criteria—Approaches with a Missed Approach less than RNP 1.0.”

d) Enter autopilot or flight director (FD) requirement. RNP SAAAR procedures with RNP values less than RNP 0.3 or with RF legs require the use of autopilot or FD driven by the RNAV system in all cases. Select in Table 1, in the column labeled “Autopilot Coupled or Flight Director Required,” one of the following in accordance with the aircraft/navigation system qualification:

“Autopilot coupled with Flight Director”

or

“Flight Director Only”

e) Enter Lowest Authorized RNP Value in Table 1 of the OpSpec, in the column labeled “Lowest RNP.” These values will vary depending on the M/M/S and navigation system combination.

NOTE: Many aircraft will have different RNP values associated with “Autopilot coupled with Flight Director” or “Flight Director Only” operations.

**F. Interim Authorization.** For interim authorization during the first 90 days and at least 100 SAAAR approaches in each aircraft type, in accordance with subparagraph D3)c). On the select data screen, text tab, the POI should select “load subparagraph g. For interim authorization text” and click on “load data,” then draft the paragraph.

**RESERVED.** Paragraphs 12-215 through 12-268.