VOLUME 2 AIR OPERATOR AND AIR AGENCY CERTIFICATION AND APPLICATION PROCESS

CHAPTER 7 THE CERTIFICATION PROCESS—TITLE 14 CFR PART 133

Section 1 The Certification Process—Part 133

2-931 PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) ACTIVITY CODE. 1341.

2-932 OBJECTIVE. Determine an applicant's ability to conduct operations under Title 14 of the Code of Federal Regulations (14 CFR) part 133. Successful completion of this task results in the issuance of a Rotorcraft External-Load Operator Certificate or a denial of a certificate.

2-933 GENERAL. This chapter provides guidelines for certification and renewal of rotorcraft external-load operators. Part 133 prescribes rules governing the operation of rotorcraft in operations involving loads carried or that extend outside the rotorcraft fuselage.

A. Certification Process. The generic certification process outlined in Volume 2, Chapter 1, Section 1, consists of five phases. The part 133 certification process combines the preapplication and application phases. At the end of each phase, gates list the completion requirements to proceed to the next phase and target timelines for each phase. The Flight Standards District Office (FSDO)-selected Certificate Management Team (CMT) should track each phase to ensure progress within the specified timeline. This timeline is a goal for tracking efficiency of the certification process, not a deadline or reason to overlook safety requirements. It is the responsibility of the applicant to meet the requirements of each gate within the specified timeline (see Figure 2-36, Certification Process Flowchart).

B. Renewal Process. A Rotorcraft External-Load Operator Certificate expires at the end of the 24th month after the month issued or renewed. The certificate holder must submit Federal Aviation Administration (FAA) Form 8710-4, Rotorcraft External-Load Operator Certificate Application, to the certificate-holding district office (CHDO) to apply for renewal of a Rotorcraft External-Load Operator Certificate. Operators should submit a renewal application at least 30 days before the expiration of the certificate.

1) Process the application for renewal of a certificate in the same manner as for original issuance.

2) The inspector will compare the renewal application with the expiring certificate. If no substantial changes are noted and the operator has a satisfactory record of compliance, the inspector may issue a new certificate without conducting a comprehensive inspection.

2-934 APPLICATION PHASE OVERVIEW. Based on the applicant's prior experience with rotorcraft external-load operations, the inspector has some discretion over which issues to discuss with the applicant prior to submission of the application package. The inspector may decide to brief an applicant by phone call or other correspondence. Conduct the required application meeting after the inspector receives and reviews the application package. If the

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application needs revision, the inspector must be prepared to discuss all items requiring correction or revision during this meeting.

A. Basic Eligibility Requirements. During initial contact with an applicant seeking a Rotorcraft External-Load Operator Certificate, determine if the proposed operation is applicable to part 133. In making this determination, ensure that the applicant meets the following eligibility requirements:

1) The applicant must have the exclusive use of at least one rotorcraft that meets the requirements of part 133, § 133.19.

2) The applicant must hold, or have available the services of at least one person who holds, a current commercial or Airline Transport Pilot Certificate (ATPC) with a rating appropriate for the rotorcraft prescribed in § 133.19, issued by the Administrator.

B. Canadian-Registered Rotorcraft. U.S. operators may add Canadian-registered rotorcraft to a Rotorcraft External-Load Operating Certificate in accordance with the following conditions:

1) Operators and new applicants for a part 133 Rotorcraft External-Load Operator Certificate must have and maintain the exclusive use of at least one rotorcraft that is U.S.-registered and meets the requirements of § 133.19.

2) Any Canadian-registered rotorcraft added to a part 133 Rotorcraft External-Load Operating Certificate and used in part 133 operations must:

a) Be type certificated (TC) under 14 CFR part 27 or 29, the regulations preceding those parts, or 14 CFR part 21, § 21.25.

b) Hold a U.S. TC in the normal or restricted category.

c) Meet the original type design or properly altered condition.

d) Have records showing maintenance in accordance with the manufacturer's instructions for continued airworthiness (ICA) and the regulations of the country of registry.

e) Undergo an airworthiness inspection prior to addition to a part 133 certificate.

C. North American Free Trade Agreement (NAFTA). Certain Specialty Air Services (SAS) authorized by the NAFTA require use of rotorcraft external loads. NAFTA operators do not require part 133 certification because they hold equivalent authorization from their respective NAFTA Civil Aviation Authority (CAA). However, the rotorcraft authorized by a NAFTA Certificate of Authority (COA) must have an original FAA or Transport Canada Civil Aviation (TCCA) civil TC. Ex-military aircraft that have restricted category certification based on military experience only are not eligible. For more information, see Volume 12, Chapter 1, Section 4.

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D. FSDO Certification (Office) File. This file becomes the office file if certification is successful or retains records justifying denial of certificate issuance. Include in the file any correspondence and copies of documents processed before, during, and after certification.

2-935 DOCUMENT COMPLIANCE PHASE OVERVIEW.

A. Document Review. After accepting the application, conduct an in-depth review of the following documents during the document compliance phase:

- Rotorcraft lease(s), if applicable;
- Two copies of the Rotorcraft-Load Combination Flight Manual (RLCFM);
- Documentation that the Chief Pilot meets the requirements of § 133.21;
- Documentation that pilots meet instrument qualifications and currency for instrument flight rules (IFR) operations, if applicable; and
- The Class D training programs, including initial and recurrent training, if applicable.

B. Establish Exclusive Use of at Least One Rotorcraft. A registration certificate or information from the aircraft registration data bank is acceptable as proof of ownership for the purpose of § 133.19. A lease agreement is required when the certificate holder does not own at least one rotorcraft certificated for external-load operations. Occasionally, the person who owns the rotorcraft also owns the corporation that is applying for the operating certificate. In such cases, the applicant and the person owning the rotorcraft are separate legal entities, and a lease agreement is necessary.

1) Any lease agreement furnished must identify the rotorcraft by type, registration number, and manufacturer's identification number (serial number). The wording of the agreement must show that the certificate holder has sole possession, control, and use of the rotorcraft for flight. The agreement must also indicate the person or entity responsible for ensuring performance of required maintenance.

2) The agreement must provide for at least 6 consecutive months of exclusive use with no escape clause. However, there is no requirement that the lease have 6 months remaining at the time of certificate issuance or renewal. If unable to determine exclusive use of the rotorcraft, obtain a copy of the lease and send it to the appropriate Regional Counsel through the regional Flight Standards division (RFSD) for evaluation.

NOTE: An external-load operator certificate is considered an airworthiness certificate for operations conducted under part 133 (refer to § 133.51) and cannot be issued to a rotorcraft unless it was TC'd under part 27 or 29, the regulations preceding those parts, or § 21.25.

C. RLCFM. The applicant is required to prepare a manual that describes characteristics of the rotorcraft used to achieve the maximum safe working conditions during an external-load operation. Volume 3, Chapter 51, Section 3, describes the requirements of part 133 and part 27 subpart G or part 29 subpart G.

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D. Testing, Currency, and Training Requirements.

1) Conduct knowledge and skill tests during the demonstration and inspection phase if the applicant cannot produce evidence that all pilots meet the appropriate regulatory requirements. Logbook entries, including those showing external-load operating experience, and previous letters of endorsement are acceptable forms of evidence to indicate compliance with 14 CFR part 61, § 61.57 and §§ 133.21, 133.23, and 133.37. For a Chief Pilot designation, the Administrator must find that the applicant's previous experience, safety record, knowledge, and skill meet the requirements of §§ 133.21 and 133.23.

2) Section 133.37 states that operators may not use crewmembers or other operations personnel for Class D external-load operations unless they have successfully completed either an approved initial or recurrent training program. Applicants must submit the training program for FAA approval during initial certification or when adding a Class D authorization. Although possibly self-trained, the Chief Pilot must also complete the operator's approved Class D training program.

3) A person who has performed a Class D external-load operation in a rotorcraft of the same type within the past 12 calendar-months does not need to undergo recurrent training.

E. Airworthiness. Airworthiness inspectors must examine the following documents:

- Rotorcraft maintenance records;
- Records showing FAA approval of the attaching means;
- Airworthiness and registration certificates;
- Approved Rotorcraft Flight Manual (RFM); and
- For Class D authorizations, records showing engineering approval of the personnel lifting device.

2-936 DEMONSTRATION AND INSPECTION PHASE OVERVIEW.

A. Knowledge and Skill Test. The applicant-designated Chief Pilot must pass an FAA inspector-administered knowledge and skill test. The test must cover the subjects prescribed in § 133.23. Volume 5, Chapter 10, Section 1, contains a detailed description of the Chief Pilot tests. The Chief Pilot or Chief Pilot designee usually administers subsequent knowledge and skill tests to other operator-employed pilots, but an FAA inspector may give the tests.

B. Operational Flight Check. If the external-load operator cannot provide a reliable record of having transported a similar load previously, § 133.33 requires the operator to demonstrate, by an operational flight check, the ability to transport an external load in a safe manner. The inspector defines the term "differs substantially from any … previously carried" using the following examples as a guide:

1) Examples of Class B loads that do not differ substantially from each other include an air conditioner versus an electrical transformer. Both these loads are non-aerodynamic and not considered substantially different.

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2) Examples of loads that could differ substantially include an air conditioner versus a large pane of glass or other lightweight loads. These loads are substantially different because the pane of glass can be aerodynamic under certain conditions. Follow § 133.41 to the extent necessary for a particular load combination.

NOTE: Conduct this flight check while the inspector observes from the ground, unless the inspector determines observation from aboard the rotorcraft is absolutely necessary.

C. Single-Pilot Operation from an Approved Pilot Station Seat. Most rotorcraft require the pilot to fly from the right pilot station seat. Some operators prefer to fly from the left pilot station during external-load operations and have modified their rotorcraft to permit such operation. Regardless of the pilot station location, the pilot must have an adequate field of view (FOV) and access to the controls and cockpit displays required for safe operation. The pilot also must have access to load release mechanisms and be able to perform emergency procedures as described in the RLCFM. The operator must obtain FAA approval of these modifications from an Aircraft Certification Office (ACO) through the Supplemental Type Certificate (STC) process, or from a FSDO through the field approval process. Either process requires both an FAA evaluation of the modified rotorcraft and ACO approval of the Flight Manual Supplement.

2-937 CERTIFICATION PHASE OVERVIEW.

A. Certification. After successful completion of the part 133 certification process, issue a Rotorcraft External-Load Operating Certificate and applicable authorizations to the applicant. In accordance with §§ 133.27(b) and 133.51, a copy of the operating certificate and aircraft authorization must be carried aboard each rotorcraft when the rotorcraft is being used in operations conducted under this part.

B. Restricted Category Rotorcraft. Rotorcraft certificated in the restricted category for special purpose of external-load operations under § 21.25(b)(7) receive restricted category airworthiness certificates for conducting external-load operations. List these rotorcraft in the Web-based Operations Safety System (WebOPSS) authorizations to ensure the operator is working within the limitations of the certificate.

2-938 PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. This task requires knowledge of part 133 regulatory requirements and FAA policies, qualification as an aviation safety inspector (ASI) (Operations), and experience as a rotorcraft external-load pilot.

B. Coordination. This task requires coordination with the FSDO's airworthiness unit and the Aviation Data Systems Branch (AFS-620).

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2-939 REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions):

- Title 14 CFR parts 1, 21, 27, 29, 61, 91, and 133; and
- Advisory Circular (AC) 133-1, Rotorcraft External-Load Operations in Accordance with Federal Aviation Regulations Part 133.

B. Forms:

- FAA Form 1360-33, Record of Visit, Conference, or Telephone Call;
- Figure 2-9, FAA Form 8430-21, Operating Certificate; and
- Figure 2-35, FAA Form 8710-4, Rotorcraft External-Load Operator Certificate Application (Sample).

C. Job Aids:

- Figure 2-36, Certification Process Flowchart;
- Figure 2-37, Part 133 Certification Job Aid; and
- Sample letters.

2-940 APPLICATION PHASE PROCEDURES.

A. Applicant Resources. When an applicant initially inquires about certification, determine the location of the proposed principal base of operation. If the principal base of operation is in the service area of another FSDO, provide the applicant with the location and telephone number of that office. Direct the applicant to the Flight Standards Service (AFS) Web site at http://www.faa.gov for applicable regulations, ACs, FAA orders, notices, bulletins, and other pertinent information. Make sure the applicant is aware of the certification and operating requirements of part 133 and answer any questions on the following:

- The general applicability and definition of terms;
- The certification requirements;
- The operating rules;
- Part 133 recordkeeping requirements; and
- The requirement to comply with other Federal, State, and local regulations.

B. Special Considerations for Part 133.

- Load class authorizations (A, B, C, or D);
- IFR authorization requirements;
- Qualifications and experience required for Chief Pilot;
- RLCFM requirement;
- Training program requirements for Class D operations; and
- Hazardous materials (hazmat) training program (if applicable).

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C. FAA Form 8400-6, Preapplication Statement of Intent. Instruct the applicant to complete the Preapplication Statement of Intent (PASI) found at http://www.faa.gov/forms and submit it to the FSDO. Complete the application phase within 90 days following receipt of this form.

1) Upon receipt of a signed PASI, review the form to ensure that there is sufficient information to further process the preapplication and that the proposed operation is consistent with part 133. The PASI must contain the following:

a) The company legal name, including any doing business as (DBA) names, the principal operation base address, the mailing address, and phone numbers and the planned date when operations will begin.

b) Names of management personnel and Chief Pilot.

c) Type, make, model, and quantity of rotorcraft operated.

d) In block 10 of the form, direct the applicant to list all desired authorizations (i.e., Class A, B, C, D, or IFR).

2) If the PASI is unacceptable, describe the reasons why it is unacceptable in section 2 of the form and return to the applicant. Notify the applicant, either verbally or by letter, that the PASI is unacceptable for the reasons detailed in section 2 of the form and that a new PASI is required. It is mandatory to retain a copy of the rejected PASI in the FSDO files.

3) When the PASI is acceptable, the FSDO manager initiates the Certification Service Oversight Process (CSOP) in accordance with the current edition of FAA Order 8000.92, AFS Certification Services Oversight Process (CSOP).

D. Certification Project Manager (CPM) and Team.

1) The FSDO designated as the CHDO will select a certification team for the certification project. At a minimum, the team must consist of an Operations, Maintenance, and Avionics inspector. Generally, these inspectors will be the principal inspectors (PI) assigned to the applicant once the certification process is completed. Once the CSOP is completed and a FSDO is designated as the CHDO for the certification project, the CHDO may request a precertification number from AFS-620. (See Volume 2, Chapter 1, Section 3.)

2) The manager of the CHDO will designate one member of the certification team to serve as the CPM. This person should have completed appropriate training and, if possible, should have previous experience in the certification of an air operator under part 133. It is desirable to designate a person with PI experience; however, depending on the situation, other inspectors may be acceptable. The certification team must conduct themselves in a professional and responsive manner with the applicant. The CPM will:

a) Serve as the primary spokesperson for the FAA throughout certification.

b) Coordinate all certification matters with assigned certification specialists.

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c) Ensure that all certification job functions are completed.

d) Coordinate all correspondence.

e) Notify the FSDO manager of any information that may significantly affect or delay the certification project.

f) Keep individuals involved with the certification project and the FSDO manager fully informed of the current status of the certification.

E. PTRS. Open the PTRS file.

F. Application Package.

1) Provide the applicant with the following materials or refer him or her to the current online resource:

- FAA Form 8710-4 (Figure 2-35);
- Part 133 Certification Job Aid (Figure 2-37);
- Letter of Nomination for Designation as a Chief Pilot (Figure 2-39); and
- Sample Rotorcraft-Load Combination Flight Manual (Volume 3, Chapter 51, Section 3, Figure 3-133).

2) Discuss how to complete the forms and advise the applicant to submit the forms with original signatures.

3) Use the following factors to determine if the inspector needs to discuss additional items with the applicant:

- Previous experience in part 133 external-load operations;
- Size, scope, and safety aspects of the operation;
- Area of operation;
- Class D or IFR authorization, if requested; and
- Ability to comply with the certification requirements.

4) If necessary, discuss the following with the applicant and answer any questions about the certification process:

a) The time and gate requirements for the completion of each phase;

b) Areas of operation (local or outside FSDO service area), including the principal base of operation and any proposed satellite bases;

c) Load class authorization(s) the operator is seeking;

d) Operator’s previous experience with part 133 operations;

e) Qualifications and experience of the designated Chief Pilot;

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f) Applicability of parts 91 and 133;

g) AC 133-1;

h) Previous or pending enforcement action against the applicant or pilot(s);

i) Purpose of the certification job aid;

j) Contents of the RLCFM;

k) Training program requirements for Class D operations; and

l) Requirements to carry hazmats.

G. FSDO Office File. Establish a file to include correspondence and copies of documents developed before, during, and after certification.

H. Application Overview. Review the application package and determine if it is complete. If the package is not complete, notify the applicant in writing (Figure 2-43, Part 133 Letter Rejecting Application Package) of the changes needed before certification can continue. Figure 2-35 shows an example of a properly completed application form. Conduct an in-depth review of the package during the document compliance phase.

I. Enforcement History Check. Determine the applicant's and the pilot's enforcement history using the Enforcement Information System (EIS). Print out the EIS query results, even if no history exists, and place in the FSDO office file.

1) If a certificate action indicates that certification of the applicant cannot be certificated while an order is in effect, inform the applicant in writing (Figure 2-41, Letter Indicating Applicant Not Eligible for Certification Because of Pending Enforcement Action) that he or she is not eligible for certification until the terms of the enforcement action have been satisfied.

2) If a certificate action is in effect for the Chief Pilot designee, inform the applicant in writing (Figure 2-42, Letter Indicating Chief Pilot Designee Not Eligible Because of Pending Enforcement Action) that the pilot is not eligible to be Chief Pilot until the terms of the enforcement action have been satisfied. Continue with the certification process only after designation and checking of another Chief Pilot designee through the EIS.

3) If a certificate action is in effect for any of the other applicant-employed pilots (other than Chief Pilot), continue with the certification process. Inform the applicant that the pilot(s) in question will not be eligible to conduct external-load operations until the terms of the enforcement action have been satisfied.

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J. Coordinate with Airworthiness Unit. Notify airworthiness that a maintenance inspector must review the maintenance records during the document compliance phase. Coordinate with the airworthiness unit during the demonstration and inspection phase for inspection of the installation and operation of the external-load attaching means. For Class D load operations, this may include approval of the personnel lifting device if not previously approved.

K. Application Meeting (Required). Schedule the application meeting after completing the application review process.

1) Review a schedule for certification and make any necessary adjustments.

2) Review the requirements for each load class authorization.

3) Discuss the requirements for the RLCFM.

4) Discuss the rotorcraft ownership or lease agreement.

5) Review the applicant's previous experience in external-load operations.

6) Review the experience and qualifications of the designated Chief Pilot.

7) Review the requirements for an IFR authorization, if applicable.

8) Review the requirements for a Class D training program, if applicable.

L. Gate Complete. Verify that all steps in the application phase are complete before continuing to the document compliance phase (see Figure 2-36). If this phase is not complete within 90 days of the receipt of the PASI, notify the applicant that the inspector may need to end the certification process. Completion of this gate triggers a new 90-day completion timeline for the document compliance phase.

2-941 DOCUMENT COMPLIANCE PHASE PROCEDURES. After receiving the application package, evaluate the information in the following documents.

A. The Application Form, FAA Form 8710-4 (Figure 2-35).

1) In block 1, the applicant indicates the following:

a) "Original Issuance" if the application is for initial certification;

b) "Amendment" if the application is for a change to an existing certificate;

c) "Renewal" if the application is for renewal of an existing certificate;

d) Certificate number if the application is for amendment or renewal; and

e) Check the appropriate block(s) to indicate the load classes requested.

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2) In block 2, the applicant indicates the name (including DBAs), mailing address, and telephone number of the operator.

3) In block 3, the applicant indicates the address and telephone number of the principal or local base of operations. Verify the applicant has listed a physical address in this block; a post office box is not acceptable.

4) In block 4, the applicant indicates the name of the Chief Pilot or designee and that pilot's airman certificate grade (e.g., private, commercial, airline transport pilot (ATP)) and certificate number.

5) In block 5, the applicant indicates all rotorcraft used by registration number, make, and model. The applicant also indicates the requested load classes and whether the FAA previously approved the attaching device for each rotorcraft. The applicant may use the "Remarks" column to indicate rotorcraft for which he or she is requesting IFR authorization.

6) At the bottom of the form, the applicant or authorized officer must date and sign the application. The person signing the application must also include their title (e.g., Director of Operations, President).

7) The inspector will complete the reverse side of the form during the certification phase.

B. Evaluate Rotorcraft Lease(s). See Volume 3, Chapter 51, Section 5.

C. Evaluate RLCFM. See Volume 3, Chapter 51, Section 3.

D. Letter of Designation of Chief Pilot (Figure 2-39). Verify the nomination of and acceptance by the Chief Pilot. Both the operator and Chief Pilot must sign the letter.

E. Qualifications of Chief Pilot. Determine if the Chief Pilot nominee meets the requirements of § 133.21 and has:

1) Previous experience in external-load operations;

2) A satisfactory safety record; and

3) Passed the knowledge and skill test for external-load operations.

NOTE: If it is necessary to administer a knowledge and skill test for the Chief Pilot, conduct it during the demonstration and inspection phase.

F. Review Rotorcraft and Equipment Maintenance Records (Airworthiness). See Volume 3, Chapter 51, Section 2, and Volume 3, Chapter 51, Section 4.

G. Class D Training Program (If Applicable). Examine Class D initial and recurrent training programs for the following elements:

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1) Ground training for pilots should include:

a) Reviewing contents of the Class D authorization;

b) Calculating the longitudinal and lateral Weight and Balance (W&B);

c) Determining single-engine hovering out-of-ground effect performance considering weight and environmental conditions (§ 133.45(e)(1));

d) Reviewing normal and emergency communications procedures, including hand signals;

e) Reviewing crew coordination procedures;

f) Reviewing preflight procedures for all equipment;

g) Reviewing Congested Area Plan (CAP) requirements;

h) Briefing all persons involved with the external-load operation;

i) Using approved personnel lifting devices;

j) Operating the winch, including weight, longitudinal and lateral center of gravity (CG), operational limitations, preflight, and normal and emergency procedures;

k) Avoiding collisions and obstacles; and

l) Reviewing other information necessary to ensure pilot competence. For example, for each rotorcraft make and model used, examine the training program for information about the following:

- Major rotorcraft systems,
- Limitations of the rotorcraft make and model,
- Performance characteristics,
- Fuel consumption and management,
- Approved RFM, approved RLCFM, and approved supplements,
- Procedures for normal and emergency situations,
- Explanations of the causes of loss of tail rotor effectiveness and procedures to recover, and
- Avoidance of potentially hazardous meteorological conditions.

2) Flight training for pilots while carrying a simulated load (ballast) on the personnel lifting device should include:

a) Computing longitudinal and lateral W&B and performance planning;

b) Performing takeoffs and landings;

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c) Maintaining directional control while hovering;

d) Accelerating from a hover;

e) Performing approaches to landing or work areas;

f) Operating the winch, if so equipped;

g) Using safety devices that prevent inadvertent release of the load;

h) Releasing the load in an emergency;

i) Single-engine hovering and maneuvering for landing; and

j) Avoiding collisions and obstacles.

3) Ground training for flightcrew members (i.e., winch operators) should include:

a) Reviewing normal and emergency communications procedures, including hand signals;

b) Operating the winch, including weight and operational limitations, preflight, normal, and emergency procedures;

c) The appropriate portions of the RLCFM;

d) Reviewing crew coordination procedures;

e) Conducting a preflight of lifting equipment;

f) Using the approved personnel lifting devices;

g) Using personal safety equipment, such as harnesses, clothing, gloves, etc.;

h) Recognizing the onset of hazardous load oscillations;

i) Recognizing other dangerous situations; and

j) Avoiding collisions and obstacles.

4) Flight training for flightcrew members (i.e., winch operators) while carrying a simulated load (ballast) should include:

a) Operating the winch, if so equipped;

b) Communicating among crewmembers, including hand signals as well as normal and emergency communications procedures;

c) Using safety devices that prevent inadvertent release of the load;

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d) Releasing the load in an emergency;

e) Using an approved personnel lifting device;

f) Using personal safety equipment, such as harnesses, clothing, and gloves;

g) Stabilizing oscillating winch loads; and

h) Avoiding collisions and obstacles.

5) Ground and flight training for ground crew personnel while carrying a simulated load (ballast) should include:

a) Reviewing normal and emergency communications procedures, including hand signals;

b) Reviewing crew coordination procedures;

c) Performing a preflight of the lifting equipment;

d) Using an approved personnel lifting device;

e) Operating the winch, including limitations and normal and emergency procedures;

f) The appropriate portions of the RLCFM;

g) Recognizing dangerous situations;

h) Recognizing the onset of hazardous oscillation of the load; and

i) Using personal safety equipment, such as helmets, gloves, and goggles.

6) If there are any unsatisfactory items, notify the applicant. The inspector may make minor corrections in the office without returning the entire package. For substantial corrections, notify the applicant in writing and place a reasonable time limit on when the corrections should be completed (Figure 2-45, Letter Explaining Document Deficiencies). Place a copy of the letter in the certification file.

H. Gate Complete. Verify that all steps in the document compliance phase are complete before continuing to the next phase (see Figure 2-36). Notify the applicant that the inspector may need to take steps to end the certification process if this phase takes longer than 90 days. The completion of this gate triggers a new 90-day completion timeline for the demonstration and inspection phase.

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2-942 DEMONSTRATION AND INSPECTION PHASE PROCEDURES.

A. Conduct Knowledge and Skill Tests. See Volume 5, Chapter 10.

B. Conduct Rotorcraft and Equipment Inspection (Airworthiness). See Volume 3, Chapter 51, Section 2, and Volume 3, Chapter 51, Section 4.

C. Conduct Operational Flight Checks (if required). Conduct operational flight checks (as required by § 133.33). Conduct this flight check while the inspector observes from the ground, unless the inspector determines observation from aboard the rotorcraft is absolutely necessary.

1) Have the operator ensure the gross weight and CG location of the rotorcraft-load combination is within approved limits. They should also verify the secure fastening of the external load and that the load does not interfere with devices provided for its emergency release.

2) Observe an initial lift-off to verify that controllability is satisfactory.

3) Have the pilot execute a 360-degree pedal turn (to the right or left, as appropriate) to verify that directional control is satisfactory while the rotorcraft is hovering.

4) Verify that no attitude encountered in forward flight results in the rotorcraft becoming uncontrollable or the occurrence of dynamic turbulence. Check that hazardous oscillations of the external load do not occur. Other crewmembers or ground personnel may verify this if the load is not visible to the ASI when conducting a check in the rotorcraft.

5) Have the pilot increase forward speed to determine the maintenance of directional stability as both the rotorcraft and external load accelerate.

6) If appropriate, have the pilot maintain horizontal flight at the maximum speed for which authorization is requested; observe whether load oscillations occur that would interfere with rotorcraft stability.

7) For load classes B, C, and D, observe normal operation of the lifting device during flight or hovering to ensure that it does not interfere with flight control.

8) Have the pilot maneuver the external load into its release position and demonstrate the release. Note any difficulties or discrepancies in the proper positioning of the load and the rotorcraft exit from the site.

9) Make notes during and immediately after the operational flight check for reference when debriefing the applicant and for later placement in the office file.

D. Conduct a Base Inspection. See Volume 6, Chapter 5, Section 1.

E. Results of Inspections and Testing. If all inspections are satisfactory, proceed with certification. Advise the applicant in writing (see Figure 2-46, Letter Explaining Inspection Deficiencies) if any items are unsatisfactory. Reschedule the inspections or tests, as appropriate.

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F. Gate Complete. Verify that all steps in the demonstration and inspection phase are complete before continuing to the next phase (see Figure 2-36). Notify the applicant that the inspector may need to take steps to end the certification process if this phase takes longer than 90 days. The completion of this gate triggers a 14-day completion timeline for the certification phase.

2-943 CERTIFICATION PHASE PROCEDURES. When the applicant meets all certification requirements, review and complete the job aid (Figure 2-37) for verification purposes.

A. Prepare and Issue Operating Certificate. Use FAA Form 8430-21 for an operating certificate (Figure 2-9). Follow these steps to prepare the certificate:

1) Enter the full legal business name of the company below the words "This certifies that." Use the same legal business name as indicated on Figure 2-47, Part 133 Letter Listing DBAs. Do not use a DBA name on the operating certificate.

2) Enter the address of the principal base of operations below the full legal name. This address must reflect the physical location of the principal base of operations.

3) Do not modify the preprinted certification statement of authority. Complete the statement by typing "ROTORCRAFT EXTERNAL-LOAD OPERATIONS" in the space provided.

4) Include the expiration date, which is the last day of the 24th calendar-month after the date of issue (§ 133.13).

5) Enter the certificate number. Contact AFS-620 if the inspector did not already obtain a precertification number.

6) Enter the date the applicant met all requirements for certification. Type the four-character alphanumeric designator and the city and state of the CHDO into the space provided (e.g., NM09, Portland, OR).

7) Enter the full title of the person signing the certificate. Enter the acronym of the region and the FSDO acronym and number (e.g., Manager, ANM-FSDO-09).

8) Submit the certificate for the FSDO manager to sign.

B. WebOPSS Authorizations. Previously, part 133 operators were not required to have authorizations listed in WebOPSS; however, the FAA uses WebOPSS to provide a national standardized method for issuing regulatory authorizations. Use of this system also puts the operator into the national database for receiving safety advisories and alerts. Enter all appropriate information in WebOPSS and issue the required paragraphs and any applicable optional paragraphs. In accordance with §§ 133.27(b) and 133.51, each rotorcraft must carry a copy of the operating certificate and aircraft authorization (WebOPSS paragraph A003) when the rotorcraft is being used in operations conducted under this part.

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NOTE: Authorizations issued to part 133 operators are not subject to 14 CFR part 119 requirements and therefore should not be referred to as "operations specifications."

C. Application Completion. Complete the inspection report on the reverse side of FAA Form 8710-4.

1) Approve each suitable rotorcraft by the following:

- Make and model;
- Registration number;
- Approval date;
- Load classes (A, B, C, or D);
- Weight authorized;
- Limitations and remarks (IFR authorizations, if applicable); and
- The inspector's signature.

2) Include any pertinent remarks.

3) Indicate how the Chief Pilot met the knowledge and skill requirements (i.e., actual test or previous logbook endorsement). In addition, indicate:

a) The Chief Pilot's name;

b) The load classes the Chief Pilot is authorized for (insert in name block); and

c) The date the Chief Pilot met the knowledge and skill requirements.

4) Sign the application or have it signed by the inspector who tested or verified the Chief Pilot's experience.

5) Check the applicable boxes to indicate the operator's authorized load classes.

6) Include the certificate number obtained from AFS-620.

7) Indicate the issue date of the certificate.

8) Enter the FSDO acronym.

9) Have the CPM approve and sign the application.

D. Certificate Denial. If the applicant does not meet certification requirements, issue a letter of denial (Figure 2-49, Part 133 Letter Denying Certification). Indicate disapproval on FAA Form 8710-4, make any necessary comments, and have the FSDO manager sign and date the application.

E. FSDO Office File. After issuing the certificate, verify that the office file contains copies or originals of the following:

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1) PASI form;

2) FAA Form 8710-4;

3) Certification job aid;

4) Operating certificate;

5) Letter designating Chief Pilot;

6) Summary of any difficulty encountered during certification and its resolution;

7) RLCFM;

8) Approved Class D training program, if applicable;

9) WebOPSS authorizations;

10) The EIS/Accident Incident Data System (AIDS) profile on the applicant and personnel;

11) Knowledge and skills tests including results, or logbook endorsements, as appropriate;

12) Approved CAP, if applicable;

13) Amendment or revision authorization letter; and

14) All general correspondence relevant to the operator.

F. Operator Records. After certification, the operator must maintain records required by the regulations, including training and currency records for that operator's pilots and Chief Pilot. For further details, see Volume 5, Chapter 10, Section 1, and Volume 6, Chapter 5, Section 1. Remind the operator of these requirements when the certificate is issued.

G. Enhanced Vital Information Database (eVID). Enter all appropriate information into the eVID Air Operator Basic File and Air Operator Aircraft Auxiliary File.

H. PTRS. Complete the PTRS record.

I. Gate Complete. Verify that all steps in the certification phase are complete (see Figure 2-36). Complete this phase within 14 days.

2-944 TASK OUTCOMES. Completion of this task results in one or more of the following:

- Issuance of a Rotorcraft External-Load Operations Certificate and the appropriate WebOPSS authorizations;
- Certification denial in writing (Figure 2-49) and the return of all original documents to applicant;

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- A letter to the applicant confirming termination of the certification process at the applicant's request; and/or
- A letter to the applicant confirming termination of the certification process after exceeding the time limit for any phase.

2-945 FUTURE ACTIVITIES. Future activities include:

- Schedule and conduct surveillance according to national guidelines;
- Renew the certificate every 24 calendar-months;
- Review CAPs, if revised (see Volume 3, Chapter 51, Section 6);
- Amend the certificate, as required (see Volume 3, Chapter 51, Section 1); and
- Amend or add authorizations, as required.

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Figure 2-9. FAA Form 8430-21, Operating Certificate

US Department
of Transportation
Federal Aviation Administration

Operating Certificate

This certifies that

Operator's Name and Address

has met the requirements of the Federal Aviation Act of 1958, as amended, and the rules, regulations, and standards prescribed therein, for the issuance of this certificate and is authorized to operate as an Air Operator and conduct

Rotorcraft External-Load Operations

in accordance with said Act and the rules, regulations, and standards;

This certificate is not transferable and, unless canceled, suspended, superseded, surrendered or revoked, shall continue in effect **until [enter the last day of the 24th calendar month after the date of issue]**

By Direction of the Administrator

Certificate number: AAA-A-XXX-A

Effective Date: [Date]

Issued at: AAXX, City, State

(Signature)

Manager, XXX-FSDO-XX
(Title)

FAA Form 8430-21 (6-87) AFS Electronic Forms System - v2.2

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Figure 2-35. FAA Form 8710-4, Rotorcraft External-Load Operator Certificate Application (Sample)

Form Approved: OMB No. 2120-0044
09/30/2008

US Department of Transportation
Federal Aviation Administration

Rotorcraft External-Load Operator Certificate Application

INSTRUCTIONS: Submit this form in triplicate to local FAA District Office

1. APPLICATION FOR *(CHECK APPLICABLE BOX)*	CERTIFICATE NO. *(For amendment or renewal only.)*	EXTERNAL - LOAD CLASS AUTHORIZATION (S)
☒ ORIGINAL ISSUANCE ☐ AMENDMENT ☐ RENEWAL		☒ A ☐ B ☐ C ☒ D

2. NAME AND ADDRESS OF APPLICANT *(Include Zip Code)*	3. PRINCIPAL OR LOCAL BASE OF OPERATIONS *(Airport, City, State, and Zip Code)*
Bob Operator 858 Lift Lane, Silver Bay, MN 55044	Duluth International Airport (KDLH) 901 Aviation Drive, Duluth, MN 55041
TELEPHONE NUMBER (202) 123-4567	TELEPHONE NUMBER (

4. NAME OF CHIEF PILOT OR PILOT IN CHARGE OF LOCAL OPERATION	AIRMAN CERTIFICATE	GRADE	NUMBER
Joe P. Ilot		ATP	1234567

5. **ROTORCRAFT TO BE USED**

REGISTRATION NUMBER	TYPE		LOAD CLASS (X)				ATTACH PREV DEVICE APPD.		REMARKS
	MAKE	MODEL	A	B	C	D	YES	NO	
N123VF	Bell	206	X				X		
N456VF	Agusta	AW139				X		X	

CERTIFICATION

I certify that the statements made on this application form and any attachments are true and correct, and that the operations indicated on this application will be conducted within the requirements of the Federal Aviation Act of 1958 and the applicable Federal Aviation Regulations.

DATE	TITLE OF AUTHORIZED OFFICER	SIGNATURE OF APPLICANT OR AUTHORIZED OFFICER
05/01/2009	President	

FAA Form 8710-4 (11-2007) SUPERSEDES FAA FORM 8420-7 and FAA FORM 8000-32 Electronic Version (Adobe)

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Figure 2-36. Certification Process Flowchart

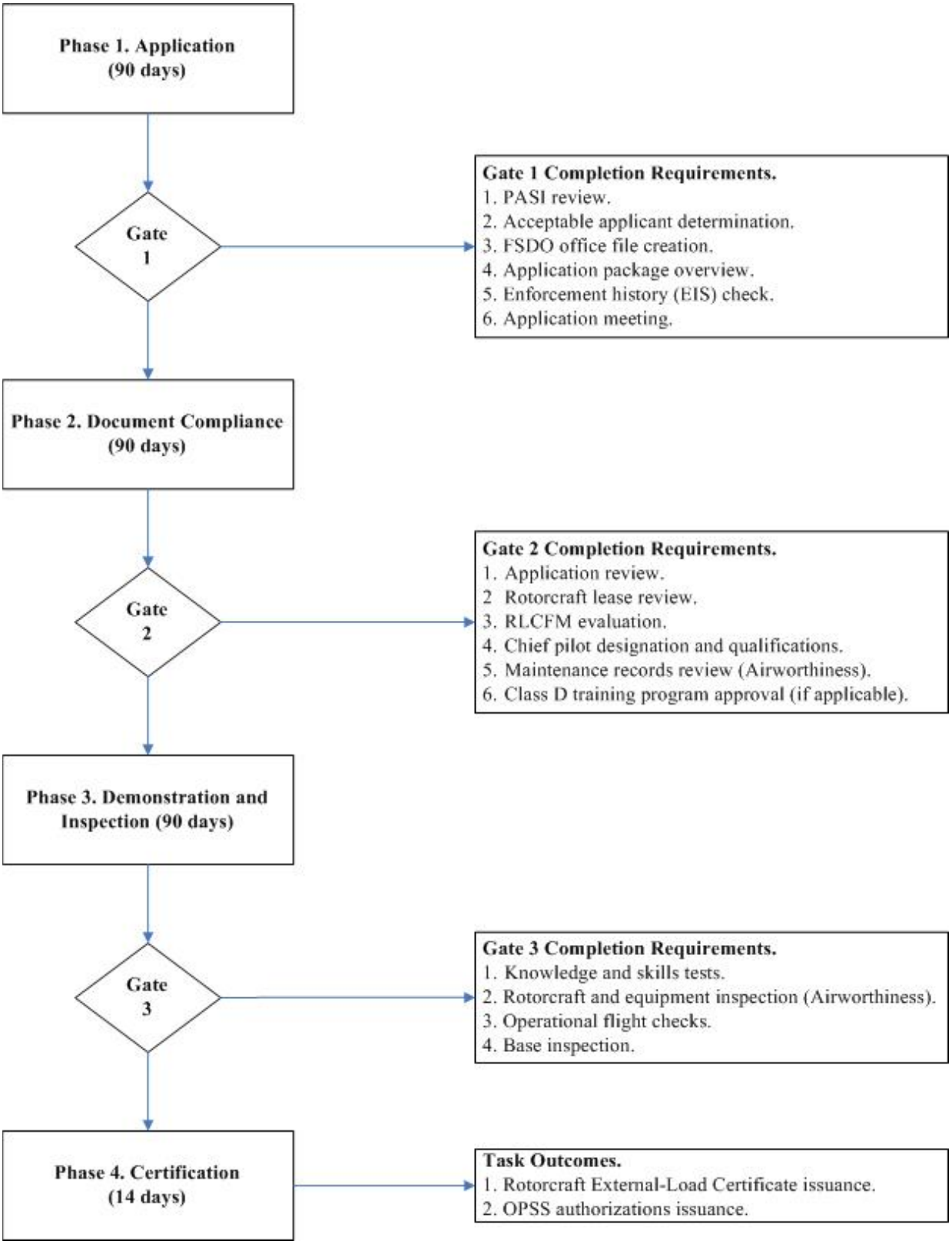

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Figure 2-37. Part 133 Certification Job Aid

14 CFR PART 133 CERTIFICATION JOB AID					
CERTIFICATION TEAM **Name** **Specialty** _____ _____ _____	**Name of Applicant** **Remarks**				
	Inspector's Initials	**Date**	**S**	**U**	**N/A**
APPLICATION PHASE					
1. Initial contact with _____.					
2. Applicant provided with current references.					
3. Answer initial certification questions.					
4. Preapplication Statement of Intent (PASI) received.					
5. PASI review.					
6. Provide application package.					
7. Application quality review.					
8. Enforcement history check.					
9. Application meeting.					
10. Gate complete (within 90 days).					
DOCUMENT COMPLIANCE PHASE					
11. Application package review (In-depth).					
a. FAA Form 8710-4.					
b. Rotorcraft ownership/lease.					
c. Rotorcraft-Load Combination Flight Manual (RLCFM).					
d. Letter of Designation of Chief Pilot.					
e. Qualifications of Chief Pilot.					
f. Review maintenance records (Airworthiness).					
g. Class D training program.					
h. Gate complete (within 90 days).					

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Figure 2-37. Part 133 Certification Job Aid (Continued)

14 CFR PART 133 CERTIFICATION JOB AID					
CERTIFICATION TEAM **Name** **Specialty** _____ _____ _____	**Name of Applicant** **Remarks**				
	Inspector's Initials	**Date**	**S**	**U**	**N/A**
DEMONSTRATION AND INSPECTION PHASE					
12. Knowledge and skill tests.					
13. Rotorcraft and equipment inspection (Airworthiness).					
a. Equipped for Class A loads.					
b. Equipped for Class B loads.					
c. Equipped for Class C loads.					
d. Equipped for Class D loads.					
e. Approved Class D personnel lifting device.					
f. Section 133.49(a) placard (in cockpit or cabin).					
g. Section 133.49(b) placard (next to load attaching means).					
(1) States maximum load.					
(2) Matches RLCFM.					
h. Installation and function of load carrying/attaching device.					
14. Operational flight checks.					
15. Base inspection.					
16. Gate complete (within 90 days).					

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Figure 2-37. Part 133 Certification Job Aid (Continued)

14 CFR PART 133 CERTIFICATION JOB AID					
CERTIFICATION TEAM **Name** **Specialty** _____ _____ _____	**Name of Applicant** **Remarks**				
	Inspector's Initials	**Date**	**S**	**U**	**N/A**
CERTIFICATION PHASE					
17. Certificate number obtained from Aviation Data Systems Branch (AFS-620).					
18. Prepare operating certificate.					
19. Prepare Web-based Operations Safety System (WebOPSS) authorizations.					
20. Complete inspection report (reverse side of Form 8710-4).					
21. Complete the Flight Standards District Office (FSDO) certification (office) file.					
22. Enhanced Vital Information Database (eVID) entry.					
23. Program Tracking and Reporting Subsystem (PTRS) entry.					
24. Certificate issuance.					
25. Gate complete (within 14 days).					
26. Surveillance plan established.					

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Figure 2-39. Letter of Nomination for Designation as a Chief Pilot

[Operator's name]
[Operator's address]
[Operator's city, State zip]

[Date]

Federal Aviation Administration (FAA)
Flight Standards District Office (FSDO)
[FSDO address]
[FSDO city, State zip]

Dear Inspectors:

I am writing to inform you that, as part of our application for a rotorcraft external-load operating certificate, I wish to designate the following person as Chief Pilot, with your approval:

[Name, certificate grade and number]

[Name] has accumulated over [XXXX] hours as pilot in command of rotorcraft and most recently was employed as an external-load pilot for [name of other operator]. In this capacity, [name] flew [make and model]. [Name] completed the FAA knowledge and skill tests on [date].

All records of experience and training are available for the inspector's review.

Sincerely,

[Signature of operator]
[Name]
[Title]

I accept this nomination for designation as Chief Pilot.

[Signature of Chief Pilot]
[Name of Chief Pilot]

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Figure 2-41. Letter Indicating Applicant Not Eligible for Certification Because of Pending Enforcement Action

FAA Letterhead

[Date]

[Operator's name]
[Operator's address]
[Operator's city, State zip]

Dear [name of applicant]:

This letter is to inform you that you are ineligible for certification as a rotorcraft external-load operator.

During our precertification review of your enforcement history, we determined that [type of enforcement action and justification for discontinuing certification process].

If you have any questions concerning this matter or desire to reapply after completion of the enforcement sanction, please contact this office at [telephone number].

Sincerely,

[Flight Standards District Office (FSDO) manager's signature]

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Figure 2-42. Letter Indicating Chief Pilot Designee Not Eligible Because of Pending Enforcement Action

FAA Letterhead

[Date]

[Operator's name]
[Operator's address]
[Operator's city, State zip]

Dear [name of applicant]:

This letter is to inform you that your nominee for Chief Pilot, [name of Chief Pilot], is not eligible for the position.

During our precertification review, we determined that an enforcement action is in effect against [name of Chief Pilot]'s airman certificate.

Please submit a new Chief Pilot nominee within 30 days from receipt of this letter.

If you have any questions concerning this matter or desire to submit another nominee for Chief Pilot, please contact this office at [telephone number].

Sincerely,

[Flight Standards District Office (FSDO) manager's signature]

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Figure 2-43. Part 133 Letter Rejecting Application Package

FAA Letterhead

[Date]

[Operator's name]
[Operator's address]
[Operator's city, State zip]

Dear [name of applicant]:

This letter is to inform you that the application package you submitted to become a rotorcraft external-load operator is not acceptable. The following is a list of discrepancies noted:

[List the specific discrepancies found in each document.]

[List any missing items or documents.]

We returned all items in your application package with this letter. We enclosed blank forms for you to submit a corrected application package. If you intend to terminate the certification process or if you have any questions, please contact this office at [telephone number].

Sincerely,

[Flight Standards District Office (FSDO) manager's signature]

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Figure 2-44. Part 133 Letter Accepting Formal Application Package

FAA Letterhead

[Date]

[Operator's name]
[Operator's address]
[Operator's city, State zip]

Dear [name of applicant]:

This letter is to inform you that we accepted your application for a rotorcraft external-load operating certificate for review.

The next step in the certification process is to review the following:

> [List the documents, as appropriate to the applicant. For example:
>
> FAA Form 8710-4, Rotorcraft External-Load Operator Certificate Application.
> Lease Agreements.
> Rotorcraft-Load Combination Flight Manual (RLCFM).
> Letter of Designation of Chief Pilot.
> Qualifications of Chief Pilot.
> Rotorcraft and Equipment Maintenance Records.
> Class D Training Programs.]

We will notify the inspector of the results of this review and any further actions required.

Sincerely,

[Certification project manager's (CPM) signature]

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Figure 2-45. Letter Explaining Document Deficiencies

FAA Letterhead

[Date]

[Operator's name]
[Operator's address]
[Operator's city, State zip]

Dear [name of applicant]:

During the document compliance phase of certification, we found the following items deficient and are returning them for correction:

> [List the specific items and discrepancy, for example:
>
> 1. FAA Form 8710-4, Rotorcraft External-Load Operator Certificate Application, should indicate the registration numbers of the rotorcraft used.
>
> 2. The Class D training program does not include any training on appropriate hand signals used by ground personnel in the event of radio communication failure.]

Please correct and resubmit the items listed above by [date] in order to continue the certification process. If you have any questions concerning this matter, please contact this office at [telephone number].

Sincerely,

[Certification project manager's (CPM) signature]

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Figure 2-46. Letter Explaining Inspection Deficiencies

FAA Letterhead

[Date]

[Operator's name]
[Operator's address]
[Operator's city, State zip]

Dear [name of applicant]:

During the [type of inspection; i.e., rotorcraft equipment, operational flight check, base inspection] we noted the following deficiencies:

[List specific deficiencies.]

You must correct these items before the certification process can continue. Inform this office when you anticipate completing these corrections so that the schedule for certification may be adjusted.

Sincerely,

[Certification project manager's (CPM) signature]

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Figure 2-47. Part 133 Letter Listing DBAs

[Operator's name]
[Operator's address]
[Operator's city, State zip]

[Date]

Federal Aviation Administration (FAA)
Flight Standards District Office (FSDO)
[FSDO address]
[FSDO city, State, zip]

Dear Inspectors:

The following corporate names (doing business as (DBA)) may be associated with rotorcraft external-load operations authorized upon certification of [legal business name]:

[List all business names and addresses.]

Sincerely,

[Name of applicant]

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Figure 2-49. Part 133 Letter Denying Certification

FAA Letterhead

[Date]

[Operator's name]
[Operator's address]
[Operator's city, State zip]

Dear [name of applicant]:

This letter is to inform you that we denied your application for an external-load operating certificate.

The reasons for denial are as follows:

> [List specific reasons in detail and cite Title 14 of the Code of Federal Regulations (14 CFR) sections where possible.]

If you have any questions concerning the above, please contact this office at [telephone number].

Sincerely,

[Flight Standards District Office (FSDO) manager's signature]

RESERVED. Paragraphs 2-946 through 2-965.

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VOLUME 2 AIR OPERATOR AND AIR AGENCY CERTIFICATION AND APPLICATION PROCESS

CHAPTER 8 CERTIFICATION OF A PART 137 OPERATOR

Section 1 The Certification Process of a Part 137 Operator

2-966 PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) ACTIVITY CODE. 1202.

2-967 OBJECTIVE. This task determines that an applicant for a Title 14 of the Code of Federal Regulations (14 CFR) part 137, Agricultural Aircraft Operations, certificate meets the rules governing the operation of agricultural aircraft by private or commercial operators. Successful completion of this task results in either issuance of a Private or Commercial Agricultural Aircraft Operator Certificate or denial of a certificate.

2-968 GENERAL. Before beginning any process, inspectors should review Volume 2, Chapter 1, Section 1, General Information and the Certification Process, and the Web-based Operations Safety System (WebOPSS).

2-969 PREAPPLICATION PHASE.

A. Basic Eligibility Requirements. During initial contact with an applicant proposing a part 137 operation, the inspector must determine if the proposed operation is applicable to part 137. In making this determination, the inspector considers the following basic eligibility requirements:

1) The applicant should apply for either a private or a commercial operator certificate, per part 137, § 137.19, Certification requirements.

a) The private agricultural aircraft operator may not conduct operations over property unless the operator owns or leases the property, or has ownership or other legal interest in the crops located on the property. (See Volume 3, Chapter 52, Section 1, Introduction to Part 137 Related Tasks, paragraph 3-4233, subparagraph D, Proof of Property Interest.) In addition, the private operator may not conduct operations for compensation or hire, or over a congested area. (Refer to part 137, § 137.35, Limitations on private agricultural aircraft operator.)

b) The private operator applicant must hold a private, commercial, or airline transport pilot certificate with appropriate ratings.

2) The commercial operator applicant must have available the services of a pilot with a current commercial or airline transport pilot certificate with appropriate ratings. (The applicant may be the available pilot.)

a) The applicant must show proof of the availability of at least one aircraft that is properly certificated, Airworthy, and equipped for the proposed agricultural operations.

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b) The applicant for a commercial operator certificate must have the appropriate knowledge and skills or have the services of a chief supervisor of agricultural operations who has the appropriate knowledge and skills.

B. Exceptions to Part 137. The following are exceptions to part 137 applicability:

1) A public aircraft conducting agricultural aircraft operations need not comply with the certification rules of part 137, but must comply with the operating rules of part 137. A public aircraft is one used exclusively in the service of any government or any political subdivision thereof and not engaged in carrying persons or property for commercial purposes. Refer to 14 CFR part 1, § 1.1.

2) The holder of a 14 CFR part 133, Rotorcraft External-Load Operations, may conduct an agricultural aircraft operation involving only the dispensing of water on forest fires by rotorcraft external-load means without meeting the part 137 certification requirements. (Refer to part 137, §§ 137.11(d) and 137.29(e))

C. Restricted and Experimental Category Aircraft. Restricted category aircraft may be used in agricultural operations, per 14 CFR part 91, § 91.313(c). Under certain conditions aircraft with experimental (amateur-built) certification may also be used in private agricultural operations, per part 91, § 91.319.

D. The Certification Team. For a part 137 certification, the office manager or unit supervisor usually selects at least one operations inspector, one maintenance inspector, and one avionics inspector, as required for a team. One person is designated as the certification project manager (CPM). All correspondence, both to and from the applicant, shall be coordinated with the CPM.

E. Establishment of a District Office File on the Applicant. This file forms the basis for the eventual operator file if certification is successful. It also provides information for justifying the denial of a certificate.

F. Job Aids. The job aid which can be useful to the certification team and the applicant is the Part 137 Certification Job Aid (Figure 2-50). The certification team may also wish to provide the applicant with a blank Part 137 Sample Schedule of Events (Figure 2-51) for the applicant's use. The applicant may, however, submit a certification schedule in any form as long as it is acceptable to the certification team.

G. The Preapplication Meeting. If the certification team has determined a preapplication meeting is necessary, that meeting should include, but not be limited to the following:

- An overall review of the letter of intent (Figure 2-52),
- A review of the applicable 14 CFR and advisory circulars (AC), and
- A review and discussion of the upcoming certification process.

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Figure 2-50, Part 137 Certification Job Aid

14 CFR PART 137 CERTIFICATION JOB AID						
NAME OF OPERATOR:	CERTIFICATION TEAM NAME _____ _____	Specialty _____ _____				
ADDRESS:	_____	_____				
Page one		**INSP. INITIAL**	**DATE**	**YES**	**NO**	**N/A**
1. Initial contact handled by:						
2. Letter of Intent.						
3. Preapplication meeting.						
4. Applicant has a current edition of AC 137-1 and understands how to obtain guidance through FSIMS.						
5. Formal application meeting.						
6. Application for private agricultural certificate submitted.						
7. Application for commercial agricultural certificate submitted.						
8. Aircraft is certificated and Airworthy.						
9. Aircraft is equipped for agricultural operations.						
10. Aircraft inspected by Airworthiness inspector.						
a. Inspection of installation and function of load-carrying or attaching devices.						
b. Optional equipment installations inspected.						
c. Airworthiness Directives (AD) record current.						
d. Installation and function of spray or diffusion equipment and jettisoning device.						
e. In-house or contract maintenance observed.						

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Figure 2-50, Part 137 Certification Job Aid (Continued)

14 CFR PART 137 CERTIFICATION JOB AID						
NAME OF OPERATOR:	CERTIFICATION TEAM NAME _____ _____	Specialty _____ _____				
ADDRESS:	_____	_____				
Page two		**INSP. INITIAL**	**DATE**	**YES**	**NO**	**N/A**
11. Applicant has services of appropriate chief supervisor and pilots.						
a. Knowledge test passed (14 CFR part 137, § 137.19(e)(1)).						
b. Skill test passed (§ 137.19(e)(2)).						
c. For congested area operations, each PIC meets the requirements of part 137, § 137.53(b)(1) through (2).						
12. Congested area operations proposed.						
a. Basic congested area plan submitted for approval.						
(1) Plan provides for approval by appropriate government officials.						
(2) Plan provides for air traffic control (ATC) coordination, if needed.						
(3) Plan includes a complete description of the operations.						
(4) Plan lists all involved aircraft by make, model, and N-number.						
(5) Plan list all involved pilots by name, certificate, grade, and number.						
(6) Plan includes appropriate maps, charts, and diagrams.						
(7) Plan has a specific method for discontinuing the operation in the event of a hazard.						
b. Plan clearly describes who is actually conducting the operation and what is being contracted.						

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Figure 2-50, Part 137 Certification Job Aid (Continued)

14 CFR PART 137 CERTIFICATION JOB AID						
NAME OF OPERATOR:	CERTIFICATION TEAM NAME _____ _____	Specialty _____ _____				
ADDRESS:	_____	_____				
Page three		**INSP. INITIAL**	**DATE**	**YES**	**NO**	**N/A**
13. Applicant understands agricultural aircraft operating limitations.						
a. Limitations of 14 CFR part 91, § 91.313(b) and (c).						
b. Prohibitions on passenger carrying.						
c. Weight and balance limits.						
d. Limits on operating without position lights.						
e. Limits on congested area dispensing.						
f. Limits on non-standard traffic patterns.						
g. Limits of part 91, § 91.119 during ferry to/from dispensing site.						
14. Commercial operator recordkeeping.						
a. Name of each person to which services were provided.						
b. Date services were provided.						
c. Name and quantity of material dispensed.						
d. Name of each pilot used and date 14 CFR part 137, § 137.19(e) was met.						
e. Knowledge of need to keep records for 1 year.						
15. Certificate number obtained from Aviation Data System Branch (AFS-620).						
16. Private or Commercial Agricultural Aircraft Operator's Certificate prepared and issued.						
17. Certification report and district office file prepared.						
18. Surveillance plan established.						

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Figure 2-50, Part 137 Certification Job Aid (Continued)

14 CFR PART 137 CERTIFICATION JOB AID						
NAME OF OPERATOR:	CERTIFICATION TEAM NAME _____ _____	Specialty _____ _____				
ADDRESS:	_____	_____				
Page four		**INSP. INITIAL**	**DATE**	**YES**	**NO**	**N/A**
19. Other						
Remarks:						
Inspectors' signatures:						

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Figure 2-51, Part 137 Schedule of Events

14 CFR PART 137 SCHEDULE OF EVENTS					
NAME OF OPERATOR:	NAMES OF MANAGEMENT PERSONNEL				
	Name		Title		
ADDRESS:					
	Applicant Date Ready	**FAA Date Received**	**FAA Date Returned**	**FAA Date Applied/ Accepted**	**Inspector Initial**
1. Letter of Intent.					
2. Application (FAA Form 8710-3)					
3. Chief Supervisor Knowledge and Skill Test.					
4. Other Pilots Knowledge and Skill Test.					
5. Aircraft Lease/Proof of Availability.					
6. Aircraft Conformity Inspection (Airworthiness).					
7. Aircraft Records (Airworthiness).					
8. Commercial Operator Recordkeeping System.					
9. Proof of Bona Fide Property Interest (Private Operators).					
10. Other:					

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Figure 2-52, Part 137 Sample Letter of Intent

[Operator's Letterhead]

[*Date*]

[*Geographically responsible FAA FSDO address*]

Sir/Madam:

This is to notify the Federal Aviation Administration of our intent to become a certificated Commercial [or Private] Agricultural Aircraft Operator under Title 14 of the Code of Federal Regulations (14 CFR) part 137.

We plan to begin operations on [date], and are ready for your certification inspection at this time. Operations will be confined to [geographic location] and will involve the operation of [number and type of aircraft].

Enclosed is FAA Form 8710-3 in duplicate.

Sincerely,

[*Operator's name and title*]

Attachments

2-970 FORMAL APPLICATION PHASE. If the certification team decides to have a formal application meeting, all members of the team should be present, barring unanticipated circumstances. If one member cannot be present, another qualified inspector of the same specialty should attend. Most likely the team will have called the meeting due to discrepancies with the application or the team perceived the applicant was unsure of what was expected. If the proposed operation is complex the certification team may decide to hold a formal application meeting.

2-971 THE DOCUMENT COMPLIANCE PHASE. The application and evidence of an appropriately equipped aircraft must be reviewed during the document compliance phase, unless they were satisfactorily reviewed in the formal application meeting. Then, this phase can be eliminated.

2-972 THE DEMONSTRATION AND INSPECTION PHASE. In this phase the applicant demonstrates the ability to comply with 14 CFR and safe operating practices.

A. Private Operators. Private agricultural aircraft operators are not required to maintain any records pertinent to their operation. However, this does not preclude the use of a written record to present evidence of informing personnel of their duties and responsibilities.

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B. Commercial Operators. Each holder of a commercial agricultural aircraft operator's certificate must maintain, and keep current at the primary base of operations, certain specific records. Commercial operators may also wish to keep a written record to indicate that personnel have been informed of their duties and responsibilities (part 137, § 137.71).

C. Time Limitation. The required records must be kept at least 12 months. The operator must make the records available for inspection by the Federal Aviation Administration (FAA) upon request.

2-973 THE CERTIFICATION PHASE.

A. Issuance of Certificate. The air operator certificate number is obtained from the Aviation Data Systems Branch (AFS-620), as described in Volume 2, Chapter 1, Section 3, Obtaining and Constructing Certificate/Designator Numbers. When the certification team has concluded that the applicant meets the qualifications for an agricultural aircraft operator's certificate, prepare FAA Form 8430-21, Operating Certificate using the date the final inspection was successfully completed as the effective date. (See Figures 2-53, FAA Form 8430-21, Sample Private Agricultural Aircraft Operator Certificate and 2-54, Sample Commercial Agricultural Aircraft Operator Certificate for samples.)

B. Signature and Certificate Facsimile. The original certificate, signed by the district office manager, is given to the operator. A copy of the certificate is placed in the district office file on the operator. A facsimile of the certificate must be carried on board each aircraft.

C. Private or Commercial Operator. The certificate and its copies must show that the certificate is for either a private operator or a commercial operator.

D. WebOPSS Templates. The appropriate authorizing documents must be issued to the operator from WebOPSS.

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Figure 2-53, FAA Form 8430-21, Sample Private Agricultural Aircraft Operator Certificate

US Department
of Transportation
Federal Aviation
Administration

Operating Certificate

This certifies that

[Enter company name]
[Enter address of principal base of operations]

has met the requirements of the Federal Aviation Act of 1958, as amended, and the rules, regulations, and standards prescribed therein, for the issuance of this certificate and is authorized to operate as an Air Operator and conduct

[Enter, Private Agricultural Aircraft Operations]

in accordance with said Act and the rules, regulations, and standards;
[Enter, dispensing of Economic Poisons Allowed or Dispensing of Economic Poisons Prohibited, as appropriate]
This certificate is not transferable and, unless canceled, suspended, superseded, surrendered or revoked, shall continue in effect
[Enter the word, indefinitely]

By Direction of the Administrator

Certificate number: [Enter certification number obtained from AFS-620]

Effective Date: [Enter date certification was completed]

Issued at: [FSDO, city & state]

[District office manager signs]
(Signature)

[District office manager's title
(Title)

FAA Form 8430-21 (6-87) AFS Electronic Forms System - v2.2

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Figure 2-54, Sample Commercial Agricultural Aircraft Operator Certificate

US Department
of Transportation
Federal Aviation
Administration

Operating Certificate

This certifies that

[Enter company name]
[Enter address of principal base of operations]

has met the requirements of the Federal Aviation Act of 1958, as amended, and the rules, regulations, and standards prescribed therein, for the issuance of this certificate and is authorized to operate as an Air Operator and conduct

[Enter, Commercial Agricultural Aircraft Operations]

in accordance with said Act and the rules, regulations, and standards;
[Enter, Dispensing of Economic Poisons Allowed or Dispensing of Economic Poisons Prohibited, as appropriate]
This certificate is not transferable and, unless canceled, suspended, superseded, surrendered or revoked, shall continue in effect
[Enter the word, indefinitely]

By Direction of the Administrator

Certificate number: [Enter certification number obtained from AFS-620]

Effective Date: [Enter date certification was completed]

Issued at: [FSDO, city & state]

[District office manager signs]
(Signature)

[District office manager's title]
(Title)

FAA Form 8430-21 (6-87) AFS Electronic Forms System - v2.2

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2-974 DISPOSITION OF FILE.

A. Certification Successful. If the application and other documents are approved and the demonstrations are acceptable, the applicant receives an agricultural operator's certificate and WebOPSS documents. The district office file must contain copies of the application and a copy of the operator's certificate in addition to the other applicable material indicated in the remainder of this section.

B. Certification Unsuccessful. If the certification attempt is denied, the application is returned to the applicant as a notice of disapproval. The district office file must contain a copy of the notice of disapproval, with appropriate remarks pertaining to the denial.

2-975 PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. This task requires knowledge of the regulatory requirements of part 137 and FAA policies and qualification as an aviation safety inspector (ASI) (operations).

B. Coordination. This task requires coordination with the airworthiness unit.

2-976 REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions):

- 14 CFR parts l, 43, 61, and 137,
- AC 137-1, Certification Process for Agricultural Aircraft Operators, and
- PTRS Procedures Manual (PPM).

B. Forms:

- FAA Form 8000-36, Program Tracking and Reporting Subsystem Data Sheet
- FAA Form 8430-21, Agricultural Aircraft Operator Certificate (Figures 2-53 and 2-54), and
- FAA Form 8710-3, Agricultural Aircraft Operator Certificate Application.

C. Job Aids:

- Figure 2-50, Part 137 Certification Job Aid,
- Figure 2-51, Part 137 Sample Schedule of Events, and
- Sample letters and figures.

2-977 PREAPPLICATION PHASE PROCEDURES.

A. Initial Inquiry. Upon initial inquiry from an applicant, ask for the location of the principal base of operation. If the principal base of operation is in the jurisdiction of another FAA district office, provide the applicant with the location and telephone number of that office. However, continue to give the applicant information to begin certification.

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B. Applicant Resources. Make sure the applicant is aware of the certification and operating requirements of parts 43, 61, 91, and 137. The applicant should have current copies of parts 91 and 137 and AC 137-1. If there is any question, explain the following:

- General applicability and definition of terms,
- Certification requirements,
- Operating rules, and
- Required records and reports of part 137.

C. Other Regulations. Advise the applicant that he or she is responsible for complying with other Federal, state, and or county aerial application regulations.

D. Letter of Intent. Determine if a letter of intent (Figure 2-52) is required based on the size and scope of the operation. (See subparagraph F below for content.) If no letter of intent is required, give the applicant three copies of the application.

E. PTRS. Open PTRS file.

F. District Office Review of Letter of Intent. Within 30 working days of the FAA's receipt of a letter of intent, review it to determine if the information is complete, accurate, and acceptable.

1) The letter of intent should contain the following items:

- Specific type of agricultural aircraft operator certificate for which he or she is applying (commercial or private);
- Company legal name and any doing business as (DBA) names, principal operation base address, primary airport address, mailing address (if applicable), and telephone numbers;
- Responsible person who can sign the letter of intent;
- Email address;
- Type of aircraft to be operated;
- Estimated date when operations or services will begin;
- Names and addresses of any management personnel or chief supervisor; and
- In the case of a corporation, the Articles of Incorporation.

2) Determine if the applicant meets the eligibility requirements for certification. (Refer to detailed eligibility requirements in § 137.19.) If the applicant does not satisfy these, discuss the specific areas that must be complied with before certification can begin.

G. Application. If the applicant appears to meet the basic eligibility requirements, give the applicant three copies of FAA Form 8710-3.

1) Discuss how to complete these forms with the applicant.

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2) Advise the applicant to submit the forms in triplicate with original signatures on each. These are distributed as follows: one in the Flight Standards District Office (FSDO) Operators' File, one to the Region Office, and one to the Applicant.

3) Explain the certification process to the applicant, including the requirements for:

- The Preapplication Phase,
- The Formal Application Phase,
- The Document Compliance Phase,
- The Demonstration and Inspection Phase, and
- The Certification Phase.

H. Preapplication Meeting.

1) Determine if a preapplication meeting is necessary based on the following considerations about the applicant:

- Previous part 137 operating experience,
- Size and scope of operation,
- Area of operation, and
- Applicant's ability to comply with requirements.

2) If a preapplication meeting is not necessary, schedule a date and time for a formal application meeting.

3) If a preapplication meeting is necessary, schedule a date and time. At the meeting discuss the following:

- Area of operation (local or across district boundaries);
  - Location of principal operation base, and
  - Location of probable satellite sites.
- Type of operation;
  - Private or commercial operator,
  - Economic poisons or other dispensing material, or
  - Operating as individual, corporation, or partnership.
- Previous experience with part 137 operations;
- Category and class of aircraft (helicopter or airplane);
- Qualifications and experience of chief supervisor;
- Applicability of parts 91 and 137;
- AC 137-1; and
- Any previous or pending enforcement action.

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I. District Office Records. If not already accomplished, complete Record of Telecon or Conference, FAA Form 1360-33. Indicate the actions taken to date and any future actions planned.

J. District Office Working File. Establish a district office working file. Place any correspondence, additional documents, and FAA Form 1360-33 in this file.

K. Other District Office Actions. Query the Enforcement Information System (EIS) to determine applicant's enforcement history.

1) If a certificate suspension or revocation order indicates that the applicant cannot be certificated while the order is in effect, inform the applicant in writing (Figure 2-61, Part 137 Letter Confirming Termination of Process at Applicant's Request) that, until the enforcement is fulfilled, the applicant is ineligible for certification.

2) Place the EIS output in the file.

L. Termination of Preapplication Phase. This ends the preapplication phase. Begin the formal application phase with the receipt of the completed application form.

2-978 FORMAL APPLICATION PHASE PROCEDURES.

A. Application Review. Within 30 working days of receipt, review the application only to determine if it is of sufficient quality to continue with certification. Review it in-depth in the document compliance phase. (A sample application is shown in Figure 2-55, FAA Form 8710-3, Agricultural Aircraft Operator Certificate Application.)

B. Application Inaccurate or Incomplete. If the application is not complete or accurate, notify the applicant in writing (Figure 2-56, Part 137 Letter Indicating Application Is Not Correct) of needed changes before certification can be continued.

C. Necessity of Formal Application Meeting. Determine if the optional formal application meeting is necessary.

1) If a formal application meeting is not necessary, schedule the certification inspection of the principal base of operations. Review with the applicant the procedures required during the demonstration and inspection phase.

2) If a formal application meeting is necessary, schedule a date and time.

D. Formal Application Meeting. Discuss the items which would have been covered in a preapplication meeting or any discrepancies in the application thus far.

E. Termination of Formal Application Phase. This completes the formal application phase. The next phase is the document compliance phase (normally conducted in the district office).

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Figure 2-55, FAA Form 8710-3, Agricultural Aircraft Operator Certificate Application

Form Approved
OMB No. 2120-0049
09/30/2014

US Department of Transportation
Federal Aviation Administration

AGRICULTURAL AIRCRAFT OPERATOR CERTIFICATE APPLICATION

INSTRUCTIONS
Submit in triplicate to the local Flight Standards District Office.

1. APPLICATION FOR	TYPE		FOR DISPENSING *(Check one)*		
		PRIVATE		ECONOMIC POISONS	ORIGINAL
		COMMERCIAL		OTHER THAN ECONOMIC POISONS	AMENDMENT
					REISSUANCE

2. NAME AND ADDRESS OF APPLICANT	3. PRINCIPAL OPERATIONS BASE *(Airport, City, State)*
TELEPHONE NUMBER	TELEPHONE NUMBER

4. OPERATING AS			
	INDIVIDUAL	OTHER *(Specify)*	5. NAME OF CHIEF SUPERVISOR OF OPERATIONS IF OTHER THAN SHOWN IN ITEM 2. (COMMERCIAL OPERATIONS ONLY)
	CORPORATION		*(First)* *(Middle Initial)* *(Last)*
	PARTNERSHIP		

6. AIRMAN CERTIFICATE HELD	CERTIFICATE NUMBER

GRADE		RATINGS			
	PRIVATE		ASEL		AMES	TYPE RATING(S) *(Specify)*
	COMMERCIAL		AMEL		HELICOPTER	
	AIRLINE TRANSPORT		ASES		GYROPLANE	

7A. DO YOU HOLD A CURRENTLY EFFECTIVE CERTIFICATE OF WAIVER FOR CONDUCTING AGRICULTURAL AIRCRAFT OPERATIONS?	NO
	YES *(Complete 7B)*

7B. WAIVER HELD	DATE ISSUED	EXPIRATION DATE	FAA DISTRICT OFFICE WHERE ISSUED

8. AGRICULTURAL AIRCRAFT TO BE OPERATED

MAKE	MODEL	EQUIPPED FOR		TOTAL NUMBER EACH AIRCRAFT OPERATED	REGISTRATION MARK (List a minimum of one)
		LIQUID	SOLID		

9. LIST THE NAME(S) AND AIRMAN CERTIFICATE NUMBER(S) OF AGRICULTURAL PILOT(S) WORKING FOR YOU AT THE PRESENT TIME
(Use separate sheet and attach if additional space is needed.)

NAME	CERT. NO.	NAME	CERT. NO.

10. REMARKS

11. CERTIFICATION: I CERTIFY THAT STATEMENTS MADE ON THIS FORM ARE TRUE AND CORRECT.

DATE	TITLE	SIGNATURE

FAA Form 8710-3 (10/12) SUPERSEDES PREVIOUS EDITION Page 1

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Figure 2-56, Part 137 Letter Indicating Application Is Not Correct

[FAA Letterhead]

[*Date*]

[*Applicant's name and address*]

Dear [*Applicant's name*]:

The enclosed FAA Form 8710-3, Agricultural Aircraft Operator Certificate Application, is being returned because [*cite the specific item number on the application form and discrepancy*].

I am also enclosing additional forms for your use in resubmitting your application. The new application should be submitted no later than [*date—30 days*] so that the certification process will not be terminated.

Sincerely,

[*Name and signature of operations inspector*]

2-979 DOCUMENT COMPLIANCE PHASE PROCEDURES. After accepting the application, the team must assure each document is complete and correct through an in-depth review.

A. Document Review. The certification team evaluates at least the following:

1) The application (FAA Form 8710-3).

a) In Block 1, the applicant indicates either private or commercial certificate, if economic poisons will be dispensed, and that the application is for original issuance.

b) Block 2 is for the name, business name, mailing address, and telephone number of the applicant. The applicant lists here all DBAs that will be used.

c) Block 3 is the applicant's principal operations base physical address and phone number.

d) In Block 4, the applicant specifies whether the application is for an individual, a corporation, or a partnership.

e) In Block 5, applicants for a commercial operator's certificate must indicate the name of the chief supervisor, if it is other than the applicant.

f) In Block 6, the applicant indicates the chief supervisor's grade of certificate; category, class, and type ratings; and certificate number.

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g) Blocks 7A and 7B should be left blank.

h) In Block 8, the applicant indicates the registration number and make and model of aircraft and whether they are equipped for liquid or solid dispensing.

i) In Block 9, the applicant lists any other pilots employed and their certificate numbers.

j) Block 10 is for any pertinent remarks the applicant may have.

k) In Block 11, the applicant or authorized officer signs and dates the application. Signatures on all copies must be original.

l) The reverse side is the inspector's report, where the certification team indicates the acceptability of the inspections. Figure 2-57, FAA Form 8710-3, Reverse Side, Inspector's Report shows a typical example.

2) Chief Supervisor (commercial operators only) and pilot qualifications (§ 137.19).

- Pilot currency requirements (part 61),
- Any existing letters of competency,
- Aircraft records (Airworthiness),
- Registration certificate,
- Airworthiness certificate,
- Aircraft Maintenance Documents, and
- Requirements of part 137, § 137.31 (shoulder harness).

B. Unsatisfactory Items. If there are any unsatisfactory items, advise the applicant that they must be corrected before certification can continue.

C. Terminating the Document Compliance Phase. When all documents are satisfactory, conclude the document compliance phase. The next phase is the demonstration and inspection phase.

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Figure 2-57, FAA Form 8710-3, Reverse Side, Inspector's Report

INSPECTION REPORT - For FAA Use Only

(To be completed by the General Aviation for Flight Standards District Office)

COMPLIANCE WITH APPLICABLE REGULATIONS

1. PILOTS	NOT REQUIRED	SATISFACTORY	UNSATISFACTORY
A. CERTIFICATES			
B. RATING(S)			
C. KNOWLEDGE TEST			
D. SKILL TEST			
2. AIRCRAFT			
A. CERTIFICATED			
B. AIRWORTHY			
C. EQUIPPED FOR AGRICULTURAL OPERATIONS			

10. REMARKS *(Include an explanation of denial if application is disapproved).*

4. DISTRICT OFFICE ACTION

	INSPECTORS SIGNATURES
☐ CERTIFICATE ISSUED	
☐ APPLICATION DISAPPROVED	
DATE INSPECTION COMPLETED	

FAA Form 8710-3 (10/12) SUPERSEDES PREVIOUS EDITION Page 2

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Figure 2-58, FAA Form 8710-3, Reverse Side, Inspector's Report Completed

INSPECTION REPORT - For FAA Use Only

(To be completed by the General Aviation for Flight Standards District Office)

COMPLIANCE WITH APPLICABLE REGULATIONS			
1. PILOTS	NOT REQUIRED	SATISFACTORY	UNSATISFACTORY
A. CERTIFICATES		X	
B. RATING(S)		X	
C. KNOWLEDGE TEST	X		
D. SKILL TEST	X		
2. AIRCRAFT			
A. CERTIFICATED		X	
B. AIRWORTHY		X	
C. EQUIPPED FOR AGRICULTURAL OPERATIONS		X	

10. REMARKS *(Include an explanation of denial if application is disapproved).*

This applicant has been employed as a chief supervisor by other operators for the past six (6) years and is establishing his own business. According to our records, neither he nor his pilots have been involved in an accident during dusting or spraying operations.

4. DISTRICT OFFICE ACTION		
X	CERTIFICATE ISSUED	INSPECTORS SIGNATURES
	APPLICATION DISAPPROVED	[Signed] William F. Worth, Operations Inspector
DATE INSPECTION COMPLETED 01/21/1990		[Signed] Steve C. Boyingon, Maintenance Inspector

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2-980 DEMONSTRATION AND INSPECTION PHASE PROCEDURES.

A. Conduct Knowledge and Skill Test. You may accept a letter of competency or a logbook endorsement by an FAA inspector as meeting the requirement for a knowledge and skill test for the chief supervisor. A chief supervisor who has a letter of competency or logbook endorsement may administer tests to other agricultural pilots employed by the operator for which he or she is the chief supervisor. If the chief supervisor has passed a state agricultural exam, it is not necessary to test on chemical knowledge. (See Volume 5, Chapter 11, Administer a Knowledge and Skill Test to an Agricultural Pilot.)

1) If any test is failed, notify the pilot immediately, following the procedures in Volume 5, Chapter 11. Reschedule the appropriate portion of the test.

2) If the pilot passes the test, issue a statement of competency letter or make a notation in the pilot's logbook. Use Volume 5, Chapter 11, Section 1, Qualify a Pilot in Command, Figure 5-198, Statement of Competency Letter, or Figure 5-199, Sample Logbook Endorsement, as applicable. (If a logbook entry is used, make a memorandum for the office file.)

B. Inspect Recordkeeping Requirements. Inspect the applicant's record system.

- Commercial operators (§ 137.71), or
- Private operators (none are required).

C. Inspect Aircraft. (Airworthiness.)

D. Conduct Base Inspection. See Volume 6, Chapter 6, Section 1, Conduct a Part 137 Base Inspection.

E. Terminating Demonstration and Inspection Phase. When all demonstrations and inspections are complete, conclude the demonstration and inspection phase. The next phase is the certification phase.

2-981 CERTIFICATION PHASE PROCEDURES. When all certification requirements have been met, complete inspection reports and checklists. Have the administrative staff prepare the operating certificate.

A. Prepare and Issue the Operating Certificate. Use FAA Form 8430-21 for an Agricultural Aircraft Operator Certificate (Figure 2-53 or 2-54). Obtain a certificate number during certification and its resolution, following the procedures in Volume 2, Chapter 1, Section 3, Obtaining and Constructing Certificate/Designator Numbers. The following information must be typed on the appropriate form when preparing the certificate for issuance:

1) Enter the certificate holder's full, legal name directly below the words, "This certifies that…." Other names, such as DBAs, shall be listed on the Agricultural Aircraft Operator Certificate in accordance with §137.55, as well as on template A001 in WebOPSS.

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2) Enter the address of the certificate holder's principal base of operations directly below the certificate holder's name. (Do not use a post office box address unless it also reflects the physical location of the principal base of operations.)

3) Do not modify the preprinted certification statement of authority. Complete the statement by typing either "Private Agricultural Aircraft Operations" or "Commercial Agricultural Aircraft Operations" in the space provided. Indicate whether dispensing of economic poisons is prohibited or allowed.

4) Obtain the final certificate number from AFS-620 in accordance with Volume 2, Chapter 1, Section 3.

5) Enter the date all requirements for certification were met.

6) Type the four-character alphanumeric designator, city, and state of the certificate-holding district office (CHDO) into the Issued at space of the form (e.g., EAl8, Richmond, VA).

7) Submit the certificate to the district office manager for signature.

8) Enter the full title of the person signing the certificate in the space provided. Enter the acronym of the region and the FSDO acronym and number in the region/office space (e.g., AWP FSDO 04).

B. Certificate Denial. If any certification requirement is not met, issue a letter of denial (Figure 2-60, Part 137 Letter Denying Certificate). Specify reasons for denial.

C. Certification Report. Assemble a certification report containing the following:

- A copy of the letter of intent, if applicable,
- The certification job aid,
- The application,
- The schedule of events,
- A copy of the Operating Certificate issued,
- A summary of any difficulty encountered during certification and its resolution, and
- A copy of any deviation or waiver issued.

D. Disposition of Certification File.

1) The district office shall retain the original certification report in the operator's district office file.

2) If airplanes are to be housed outside of the CHDO's jurisdiction, the principal operations inspector (POI) assigned to the operator shall notify the other district office and provide a copy of any portion or all certification files at their request.

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E. Minimum Equipment List (MEL). If applicable, issue authorization D095 from WebOPSS to authorize operations with an MEL. (See Volume 4, Chapter 4, Section 2, Approve a Minimum Equipment List for a 14 CFR Part 91 Operator.)

F. Enhanced Vital Information Database (eVID). Enter all appropriate information in the eVID Air Operator Basic File and Air Operator Aircraft Auxiliary File.

G. Web-based Operations Safety System (WebOPSS). WebOPSS authorizations were not previously issued to part 137 operators as this was done utilizing paper documents; however, the WebOPSS system is now used to provide a national standardized method for issuing the regulatory authorizations such as congested area operations. The use of WebOPSS also places the operator into the national database for receiving safety advisories and alerts. Enter all appropriate information in WebOPSS and issue at least required paragraphs A001, A002, A003, A004, A007, and A447. Paragraphs D137 and D095 are optional. A503 is used to generate the Letter of Authorization for Agricultural Aircraft Operations over Congested Areas.

H. District Office File. The CPM shall ensure an official office file is established after certification is complete. The file shall contain at least the following:

- Material from any working file used up to this point,
- The certification report and attachments,
- EIS/Accident Incident Data System (AIDS) profile on applicant and personnel, including a negative report, if applicable,
- Surveillance reports, and
- General correspondence relevant to the operator or agency.

I. PTRS. Make PTRS entry for this task.

2-982 TASK OUTCOMES. Completion of the task results in either:

A. Issuance of Certificate. Issuance of a certificate authorizing operations under part 137.

B. Denial of Certificate. A record on file consisting of:

1) Written notification to the applicant denying the certificate (Figure 2-60, Part 137 Letter Denying Certificate) and the return of all original documents, or;

2) A letter to the applicant confirming termination of the certification process per the applicant's request (Figure 2-61, Part 137 Letter Confirming Termination of Process at Applicant's Request).

2-983 FUTURE ACTIVITIES.

A. Develop Post-Certification Plan. When developing a post-certification plan, the inspector should plan to conduct additional surveillance or inspections during the first 90 days the organization is in business. Accomplishment of the surveillance may require assistance from other district offices.

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B. Conduct Surveillance. According to the established post-certification plan, conduct surveillance at appropriate intervals.

Figure 2-59, Part 137 Letter Listing DBAs

Not used. Use template A001 from WebOPSS. DBAs are also to be listed on FAA Form 8430-21, Agricultural Aircraft Operator Certificate per Part 137, §137.55 Business name: Commercial agricultural aircraft operator.

Figure 2-60, Part 137 Letter Denying Certificate

[FAA Letterhead]

[*Date*]

[*Applicant's Address*]

Dear [*Applicant's name*]:

This letter is to inform you that your application for an Agricultural Aircraft Operating Certificate under Title 14 of the Code of Federal Regulations (14 CFR) is denied. During the process of application, the following items were not in compliance with the requirements of 14 CFR parts 61 and 137:

[*To the inspector: List only those items that were found not in compliance and cite the specific section. For example:*

1. Pilot did not possess valid medical certificate (part 61, § 61.3(c)).

2. The aircraft presented for initial inspection did not have a properly installed shoulder harness (part 137, § 137.31 (b)).]

Attempts by personnel from this office to determine if these discrepancies have been corrected have not been successful.

Sincerely,

[*District Office Manager's signature*]

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Figure 2-61, Part 137 Letter Confirming Termination of Process at Applicant's Request

[FAA Letterhead]

[*Date*]

[*Applicant's name and address*]

Dear [*Applicant's name*]:

This letter confirms your request to terminate the certification process for the issuance of an Agricultural Operating Certificate (Title 14 of the Code of Federal Regulations (14 CFR) part 137).

All materials submitted for review are being returned with this letter. Any attempts to re-apply after the date of this letter will require reinitiating the entire certification process.

Sincerely,

[*District Office Manager's signature*]

Figure 2-62, Part 137 Letter Indicating Applicant Ineligible for Certification Because of Existing Enforcement Action

[FAA Letterhead]

[*Date*]

[*Operator's name and addres*s]

Dear [*operator's name*]:

This letter is to inform you that you are ineligible for certification as an agricultural aircraft operator (Title 14 of the Code of Federal Regulations (14 CFR) part 137).

During the investigation of enforcement history, it was determined that [*insert type of enforcement action*].

If you have any questions concerning this matter or desire to reapply once the enforcement action has been fulfilled, please contact this office at [*telephone number*].

Sincerely,

[*District Office Manager's signature*]

RESERVED. Paragraphs 2-984 through 2-1000.

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VOLUME 3 GENERAL TECHNICAL ADMINISTRATION

CHAPTER 7 ISSUE A CERTIFICATE OF WAIVER OR AUTHORIZATION: § 91.119(B) AND/OR (C) (MINIMUM SAFE ALTITUDES)

Section 1 Issue a Certificate of Waiver or Authorization: § 91.119(b) and/or (c) (Minimum Safe Altitudes)

3-181 PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) ACTIVITY CODES: 1230.

3-182 OBJECTIVE. The objective of this task is to determine whether or not an applicant is eligible for the issuance of a Certificate of Waiver to Title 14 of the Code of Federal Regulations (14 CFR) part 91, § 91.119(b) and/or (c). Successful completion of this task results in the issuance of a Certificate of Waiver or Authorization, or the disapproval of an application.

3-183 BACKGROUND.

A. Definitions.

1) Congested and Densely Populated Areas. See Volume 3, Chapter 51, Section 6.

2) Pipeline/Powerline Patrol. Operation of an aircraft in order to locate leaks or breaks in a pipeline or powerline.

3) In the Public Interest. Operations conducted by Federal, State, and local governments; by private law enforcement operators; or for the purpose of conservation, wildlife preservation, or pipeline or powerline patrols.

B. Authority. Part 91 provides for the issuance of a waiver of § 91.119(b) and/or (c). Part 91 also provides for the issuance of a waiver of § 91.313(e) if the applicant is to perform limited operations with restricted category aircraft. See Volume 3, Chapter 4.

C. Examples. Examples of waivers of § 91.119(b) and/or (c) are pipeline/powerline patrol, low-level thermography flights, and flights by foreign operators under the North American Free Trade Agreement (NAFTA).

D. Regulations That May Not Be Waived. Section 91.119(a) and (d) shall not be waived.

E. History of the Waiver. Except for a minor amendment to provide relief to recognize the unique capabilities of helicopters, minimum safe altitudes (MSA) have remained unchanged. These rules were specifically written to safeguard life and property on the surface, with the highest priority placed upon the protection of human life. The Federal Aviation Administration (FAA) recognizes that certain operations justify waiving the 1,000-foot minimum over congested areas and/or 500-foot minimum separation distance from persons or property on the surface.

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F. Eligibility. Operators of standard, limited, or restricted category aircraft may apply for a Certificate of Waiver to engage in pipeline/powerline patrol operations. Operators of restricted category aircraft may also require a waiver of § 91.313(e) if operations will require flight over congested areas. See Volume 3, Chapter 2.

G. Forms Used. FAA Form 7711-2, Application for a Certificate of Waiver or Authorization (Figure 3-43), is a multipurpose form used to apply for FAA Form 7711-1, Certificate of Waiver or Authorization (Figure 3-44). All blocks on the form may not be applicable to the application request.

H. Submission. Completion and submission of FAA Form 7711-2 is the responsibility of the applicant. A completed FAA Form 7711-2 should be submitted to the Flight Standards District Office (FSDO) in whose jurisdiction the applicant plans to conduct the operation a minimum of 45 days before the planned operation begins. If the request involves operations in more than one FSDO's area of jurisdiction, the application should be submitted to the FSDO in the area of the applicant's principal business office.

I. Approval or Denial. Within 30 days of receipt of FAA Form 7711-2, an approved FAA Form 7711-1 or the disapproval of the application must be issued by the FSDO. Once approved, FAA Form 7711-2 becomes a part of FAA Form 7711-1. The jurisdictional FSDO manager or his or her designated representative, who may be either the assistant manager or another supervisor from within that jurisdictional FSDO, will sign the waiver upon approval.

J. Expiration Date. An FAA Form 7711-1 will expire no later than 24 calendar-months from the date of issuance. A Certificate of Waiver may be reissued after the submission of a properly prepared FAA Form 7711-2 and, if appropriate, the applicant's previously approved operations manual. For NAFTA operations, the expiration date will be a maximum of 12 calendar-months from the date of issuance.

3-184 WAIVER OF § 91.119(b).

A. Inspector Considerations. There are three basic points that an inspector should consider before processing a request for a waiver of § 91.119(b):

1) Is the waiver request in the public interest?

2) Can the operation be conducted with an equivalent level of safety?

3) What special provisions are necessary to ensure this adequate safety margin?

B. Evaluation of the Application. The applicant should describe in detail the proposed operation and specify the altitude essential to accomplish the operation. When issuing the waiver, the altitude requested should be an absolute minimum, but may not be less than 500 feet from persons or property, unless necessary to safeguard human life (see subparagraph 3-185B). Operations involving flights in airspace requiring two-way communication will be coordinated with the appropriate air traffic facility. If operations will involve towing, see Volume 3, Chapter 3.

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C. Special Provisions. For clarity, special provision guidelines are divided into single-engine and multiengine operations.

1) Single-Engine Aircraft. The minimum altitude permitted in the waiver must comply with § 91.119(a). This may be accomplished by requiring specific routes and altitudes as necessary to ensure that the aircraft can reach a safe landing area in the event of engine failure. If specific routes and altitudes are used, they should be depicted on a chart. The waiver should be limited to day visual flight rules (VFR) operations only.

2) Multiengine Aircraft. If the aircraft is operated at weights that will allow it to climb with the critical engine inoperative, consistent with terrain but not less than 50 feet per minute (fpm), specific routes and altitudes are not required. Waivers may authorize day and night VFR.

3-185 WAIVER OF § 91.119(c).

A. Five-Hundred-Foot Minimum Separation Distance. Unless it is necessary to safeguard human life or it can be determined to be in the public interest and contributing to the public health, welfare, and safety, the 500-foot minimum separation distance from persons on the surface shall not be waived. Issuances of waivers to safeguard human life are discussed in subparagraph 3-185B. Issuance of waivers determined to be in the public interest are discussed in subparagraph 3-185C.

B. Waivers Issued To Safeguard Human Life. For waivers issued to safeguard human life, the applicant should be required to identify a minimum altitude or proximity that will permit accomplishment of the operation. The minimum requested should be the absolute minimum permitted. In addition:

1) Single-Engine Aircraft. These aircraft should be prohibited from flying directly at or over persons on the surface and, when operating in close proximity to persons on the surface, it must always be possible to comply with § 91.119(a) without excessive maneuvering.

2) Multiengine Aircraft. These aircraft should be limited to weights that will allow it to climb, with the critical engine inoperative, consistent with terrain but not less than 50 fpm. If this is not possible, the multiengine aircraft should be treated in the same manner as single-engine aircraft.

C. Waivers Issued in the Public Interest. Operators determined to act in the public interest may be authorized to operate closer than 500 feet, but under no condition closer than 200 feet, to persons on the surface. Waivers issued in accordance with this paragraph require the development of an operations manual (see subparagraph 3-185F and paragraph 3-186).

D. Special Provisions. Depending upon the type of operation involved, it may be necessary to prescribe numerous and detailed special provisions. The following are special provisions that should be shown on every waiver issued under Volume 3, Chapter 6, Section 1, paragraph 3-147, along with any additional provisions considered necessary by the issuing FSDO:

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1) Operations are limited to VFR, day only.

2) Unless authorized by an accepted operations manual, intentional flight at less than 500 feet directly over persons on the surface is prohibited. In addition, the aircraft may not be flown along a path that would require excessive maneuvering to avoid persons on the surface in the event of an emergency.

3) Unless authorized by an accepted operations manual, the terms of the waiver are limited to within one-quarter mile of the authorized route or operating area, except that no community will be overflown below 500 feet or at less than 1,000 feet over the congested areas of a city.

4) Operations under this waiver are limited to the pilots listed on FAA Form 7711-2 or the accepted operations manual.

5) In the event of an emergency (the known or suspected rupture of a gas pipeline, flood, storm, etc.) requiring immediate action, the waiver holder may use pilot personnel without compliance with either the initial or annual check requirements. However, within 7 days of the time that this emergency authorization is exercised, the waiver holder will notify the FSDO responsible for issuing the waiver of such action.

6) Except when necessary to safeguard human life, no operation will be conducted in closer proximity to persons on the surface than authorized by this waiver.

E. Other Waivers of § 91.119(c). A waiver for operations that are not for the purpose of safeguarding human life or in the public interest should prohibit flight closer than 500 feet to any vessel, vehicle, or building on the surface unless the pilot takes reasonable action to determine that they are not occupied by persons at the time of the operation.

F. Manual. If § 91.119(c) is to be waived because it has been determined to be in the public interest (see subparagraph 3-185C), the applicant must submit an original and one copy of an operations manual to the local FSDO for acceptance. Operating and safety procedures must be incorporated in the operations manual. Once accepted by the FSDO, the manual becomes a part of the special provisions. The manual is the standard by which a waiver holder must conduct all operations pursuant to the Certificate of Waiver. The controls, procedures, and conditions set forth in the operations manual are the primary assurance that persons on the surface will not be jeopardized, and will become the basis for issuing of the Certificate of Waiver. Therefore, failure to comply with the provisions of the manual will be considered a violation of the terms of the waiver and may constitute justification for cancellation of the waiver.

G. Manual Revisions. Inspectors should encourage operators to discuss manual revisions with the FSDO before they are submitted for acceptance. Revisions should not be distributed by the operator until accepted by the FAA and returned to the operator with signature and date. If the revisions are not acceptable, notify the operator in writing within 10 days of receipt of the revisions at the FSDO.

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3-186 CONTENTS OF THE OPERATIONS MANUAL. The manual must include, but is not limited to, the following:

A. Title Page and Revision Page. This is generally self-explanatory, but Volume 3, Chapter 51, Section 3, Figure 3-133, Sample Rotorcraft-Load Combination Flight Manual, contains typical examples.

B. Company Organization.

1) Business name, address, and telephone number of applicant.

2) If more than one pilot is to be used under the terms of this waiver, the applicant must designate a chief pilot.

C. Pilots to be Used. This section should contain a list of pilots to be used, including their pilot certificate numbers, grade, and class, and date of medical.

D. Aircraft to be Used. This section should contain a list of aircraft by make and model.

E. Operations Manual Distribution and Revision. This section should contain:

1) Procedures for distribution of the manual to all flight personnel.

2) A system for revising the manual to ensure that all manuals are kept current. Revisions for an accepted manual should be forwarded to the FSDO at least 15 days before the proposed effective date.

3) Procedures that describe how approved changes to the manual will be distributed to the pilots.

F. Area of Operations. There will be a wide variety of operational needs. Some can be identified as specific patrol routes, whereas others may involve open water or forest areas of an entire state. The following information should be provided, as appropriate.

1) Specific Routes (Powerline/Pipeline Rights-of-Way). The manual must contain each route depicted in either cartographic or photographic form. The depiction must identify each community, settlement, stadium, or other common gathering place located within one-quarter mile on either side of the route. The depiction should include additional information regarding the location of hazardous power or phone lines or other obstructions requiring altitudes in excess of the minimums prescribed in the waiver.

2) Large Area Routes. Manuals developed by operators needing broad area authorization should clearly describe the land or water areas where the privileges of the waiver are to be exercised. This may be in the form of a state map with operational areas depicted or a description of operational areas (i.e., open water areas and sparsely populated areas where wildlife preservation operations are to be conducted). It is especially important that the operator provide pilots with sufficient information to know when the privileges of the waiver apply and when they must be in full compliance with § 91.119(b) and (c).

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G. Flight Operations. The operations manual will contain a flight operations section covering information necessary to ensure compliance with the waiver, and include at least the following:

1) Weather Conditions. Operations are limited to VFR.

2) Operations in Airspace Requiring Two-Way Communication. The terms of the waiver may not be exercised in airspace requiring two-way communication unless authorization for the flight has been obtained from the appropriate air traffic facility.

3) Operations Within 500 Feet of Persons. Section 91.119(c) prohibits operations directly over persons on the surface at less than a 500-foot altitude. When operations at less than a 500-foot altitude or a 500-foot lateral clearance from persons are desired, procedures must be approved by the FAA that include approach and departure paths, emergency procedures to be used, and the pattern and altitude that will permit the aircraft, if single-engine, to land in an emergency without endangering persons or property on the surface. Additionally, the aircraft flightpath must be such that it will not be necessary to pass directly over persons on the surface in the event of an emergency. The trajectory of the aircraft must pass to one side or the other of any persons on the surface.

4) Entry/Departure Paths. All normal entry and departure paths to and from the waivered flightpaths will be charted and available to the pilot.

H. Certification/Airworthiness. The aircraft may be certificated in any category, except experimental and provisional, provided the requirements of §§ 91.7 and 91.203 are met. Procedures shall be included to ensure that inspections will be in accordance with 14 CFR parts 43 and 91.

I. Pilot Personnel Minimum Requirements. The operator will establish and specify the minimum pilot requirements. Minimum requirements should meet or exceed the following:

- A current commercial or airline transport pilot certificate with ratings appropriate to the category and class of aircraft to be used under the terms of the waiver;
- At least 500 hours as pilot in command (PIC) logged;
- A minimum of 100 hours in the category and class of aircraft to be used;
- A minimum of 25 hours as PIC in the category and class of aircraft to be used; and
- A minimum of 5 hours as PIC in the make and model aircraft to be used under the waiver.

J. Initial Checkout. The manual must provide that each pilot be route qualified and have his or her logbook endorsed as such by a chief pilot. The endorsement must be made by the chief pilot, although another qualified pilot may give the initial checkout. In addition to route qualification, each pilot must satisfactorily demonstrate knowledge in the following:

- Route familiarization,
- Aircraft performance and limitations,

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- Emergency procedures,
- Operations manual, and
- Terms and conditions of the waiver.

K. Annual Check. The chief pilot will examine each pilot at least once every 12 calendar-months. The examination will consist of an oral and practical test that covers the subject areas for the initial checkout.

L. Pilot Notices. The applicant must develop a procedure to notify all pilots of special circumstances such as the avoidance of noise-sensitive areas, changes in operating procedures, etc.

M. Accident Notification. The manual must contain procedures for the notification and reporting of accidents.

3-187 REVIEW FAA FORM 7711-2. Pertinent blocks are discussed below for clarity and uniformity. The application should be reviewed upon receipt for obvious discrepancies. The information submitted by the applicant on FAA Form 7711-2 *must not* be altered by the issuing office.

A. Blocks 1 and 2. If the applicant is a representative of an organization, the organization's name should appear in block 1. The name of the individual and his or her position or authority to represent the organization (e.g., the "responsible person") should appear in block 2. If the applicant is not representing others, the term "NA" should be entered in block 1 and the applicant's name entered in block 2.

B. Blocks 3, 4 and 5. Applicant should state information as explained on each individual block.

C. Block 6. In many instances, the applicant does not know or is not sure which sections of the regulations are involved. A conference with the applicant before acceptance of the application may be necessary.

D. Block 7. It is sufficient for the applicant to use the terms "agricultural," "forest and wildlife," "aerial surveying," "patrolling," or "weather control" to describe the type of operation. However, the applicant should include detailed information on the type of operation.

E. Block 8. A detailed description of any city, town, county, and/or state over which operations will be conducted. For powerline/pipeline operations, the routes must be depicted in cartographic or photographic form. This depiction should include every community, settlement, stadium, or other common gathering place located on either side of the route. The depiction should also include the areas where powerlines, phone lines, or any other obstructions cross the route.

F. Block 9. The applicant should list beginning and ending dates for the operation in this block. In cases involving one-time operations where the applicant has not indicated an alternate date, the inspector should advise the applicant to request alternate dates in order to save time and unnecessary paperwork.

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G. Block 10. At the time the application for a waiver is submitted, the applicant may not know the names of the pilots or the aircraft to be used in a particular operation. The application may be accepted with a notation in block 10 that a list will be provided at a later, specified date.

3-188 PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. This task requires knowledge of the regulatory requirements of part 91 and FAA policies and qualification as an Aviation Safety Inspector—Operations (ASI-OP).

B. Coordination. This task may require coordination with the airworthiness unit within the district office, other FSDOs, appropriate air traffic facilities, and the Regional Office (RO).

3-189 REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions):

- Title 14 CFR parts 1 and 61.
- PTRS Procedures Manual (PPM).

B. Forms:

- FAA Form 7711-1, Certificate of Waiver or Authorization (Figure 3-44).
- FAA Form 7711-2, Application for a Certificate of Waiver or Authorization (Figure 3-43).

C. Job Aids:

- Figure 3-45, Instructions for Completion of FAA Form 7711-2.
- Figure 3-46, Part 91 Operations Manual Development Guide.
- Figure 3-47, Sample Letter of Disapproval of an Application.
- Figure 3-48, Sample Letter of Nonacceptance of an Operations Manual.
- Figure 3-49, Sample Letter of Acceptance of an Operations Manual.
- Figure 3-50, Part 91 Minimum Safe Altitude Waiver and Facility Inspection Job Aid.
- Figure 3-51, Sample Letter of an Unsatisfactory Inspection.

3-190 PROCEDURES.

A. Initial Contact.

1) Provide the applicant with a copy of FAA Form 7711-2 (Figure 3-43) and the Instructions for Completion of FAA Form 7711-2 (Figure 3-45).

2) Advise the applicant to complete blocks 1 through 10 and block 17 on FAA Form 7711-2.

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3) Advise the applicant that the completed FAA Form 7711-2 must be submitted in duplicate (the original and one copy) to the FSDO at least 45 days before planned operations begin.

4) If § 91.119(c) is to be waived in the public interest:

a) Advise the applicant that any required operations manual must be prepared and submitted in duplicate (the original and one copy) with the completed FAA Form 7711-2; and

b) Provide the applicant with a copy of the Operations Manual Development Guide (Figure 3-46).

B. PTRS. Make appropriate PTRS entries.

C. Receipt of FAA Form 7711-2 and an Operations Manual, if Required. Using the Part 91 Minimum Safe Altitude Waiver and Facility Inspection Job Aid (Figure 3-50), the information provided by the applicant, and the background information in paragraph 3-183, review FAA Form 7711-2 for all pertinent information for the proposed operation. Accept strikeovers that are minor in nature and initialed by the applicant. Blocks 11 through 16 apply to airshow and air race waiver requests only.

1) Blocks 1 and 2—Name of Organization/Name of Responsible Person. Ensure that the applicant has indicated the name of the organization or individual applying and the name of a person responsible for matters concerning the application.

2) Block 3—Permanent Mailing Address. Ensure that the applicant indicates the permanent mailing address of the organization or individual named in block 1 or 2.

3) Blocks 4 and 5—Pending Waivers/Denials. Ensure that the applicant has indicated whether they have any pending waivers at any other FAA office or whether they have ever had an application for waiver denied.

4) Block 6—14 CFR Sections to Be Waived. Ensure that the applicant has listed all sections of the regulations that need to be waived.

5) Block 7—Description of Operations. Ensure that the applicant has indicated the type of operation to be conducted.

6) Block 8—Area of Operations.

a) Ensure that the applicant has listed specific locations and altitudes of the proposed operation.

b) Ensure that the area of operation is within the jurisdiction of the FSDO.

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7) Block 9—Time Period.

a) Ensure that the applicant has included a beginning date and hour and an ending date and hour for the planned operation.

b) Ensure that the requested dates do not exceed 24 calendar-months.

8) Block 10—Aircraft and Pilots. Check for aircraft make and model, pilot names, certificate numbers and ratings, and full home addresses. Block 10 may be accepted with the statement, "A list containing aircraft and pilot information will be furnished on [applicant enters a specific date]."

9) Block 17—Certification. Ensure that the applicant has signed and dated each page of the application.

10) If FAA Form 7711-2 Has Not Been Completed:

a) List the reasons for disapproval in the "Remarks" section of FAA Form 7711-2. In the "Action" block, mark the "Disapproved" box and sign and date.

b) Prepare a letter of disapproval of an application (see Figure 3-47) with a suspense date for submission of a corrected application.

c) Retain a copy of FAA Form 7711-2 for future comparison.

d) Return the application, the operations manual (if appropriate), any supporting documentation, and the letter of disapproval to the applicant.

e) Make appropriate PTRS entries.

11) If FAA Form 7711-2 Has Been Completed: Continue with the task.

D. Enforcement Information System (EIS). Consult the EIS database for the violation history of the applicant and/or pilots.

E. Review the Proposed Operations Manual. Review the operations manual to ensure that the manual contains the information discussed in paragraph 3-186.

1) If the manual is unsatisfactory:

a) List reasons for nonacceptance in the Remarks section of FAA Form 7711-2. In the "Action" block, mark the "Disapproved" box and sign and date.

b) Prepare a letter of nonacceptance (see Figure 3-48) with a suspense date for submission of a corrected operations manual.

c) Retain a copy of the manual for future comparison.

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d) Return FAA Form 7711-2, the disapproved operations manual, any supporting documentation, and the letter of nonacceptance to the applicant.

2) If the manual is satisfactory:

a) Mark the "approved" box on FAA Form 7711-2, and sign and date in the "action" block of the form.

b) Prepare a letter of acceptance of the operations manual (Figure 3-49).

c) Continue with the task.

F. Pre-Inspection Activities.

1) Contact the applicant by telephone and/or letter to set up a date and time to conduct the facility inspection.

2) Coordinate with the airworthiness unit to inspect aircraft and engine logbooks; the aircraft Weight and Balance (W&B) to see if it has been revised to reflect current equipment; and any special equipment for proper mount or installation (cameras, gas leak detector devices, helicopter device for powerline voltage readout, etc.).

3) If a restricted category aircraft will be used, coordinate with the aircraft certification office to attend the facility inspection.

G. Conduct Facility Inspection. Use the Part 91 Minimum Safe Altitude Waiver and Facility Inspection Job Aid (Figure 3-50) to conduct the facility inspection.

1) Check for appropriate pilot certificates, medical certificates, and photo identification in accordance with part 61 requirements.

2) Check pilot logbooks for the recency of experience, appropriate aircraft qualifications, and route qualification endorsements.

3) Ensure that the registration certificate and the airworthiness certificate, as well as a copy of the special operating limitations (restricted category), are on board the aircraft.

H. Unsatisfactory Inspection.

1) Brief the operator on the discrepancies found during the inspection.

2) List the reasons for the unsatisfactory inspection in the "Remarks" section of FAA Form 7711-2. In the "Action" block, mark the "Disapproved" box and sign and date.

3) Prepare a letter of unsatisfactory inspection (see Figure 3-51). Include in the letter a date for a followup inspection that is 15 days from the date of the letter of disapproval.

4) Retain a copy of FAA Form 7711-2 to use in the followup inspection to ensure that discrepancies found in the initial inspection have been corrected.

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5) Return the application, the operations manual, any supporting documentation, and the letter of disapproval to the applicant.

6) Make appropriate PTRS entries.

7) Perform followup inspection.

I. Satisfactory Inspection.

1) Mark the "Approved" block on FAA Form 7711-2. Sign and date in the "Action" block of FAA Form 7711-2.

2) Prepare FAA Form 7711-1.

3) Develop any special provisions from paragraph 3-184, and any other provisions deemed necessary in the interest of safety.

4) If the area of operations indicates that the operator will conduct operations in another FSDO's area, the following shall be included as a special provision: "Operations outside the area of operations authorized in this waiver may be conducted without obtaining an additional Certificate of Waiver, provided the operations are coordinated in advance with the appropriate FSDO and all special provisions imposed by that office are complied with."

5) Submit FAA Form 7711-1 to the district office manager, or designated representative, for signature. The designated representative may be no lower than the operations unit supervisor.

J. District Office File. Prepare a district office file on the operator that includes, but is not limited to, a copy of the following:

- FAA Form 7711-1 and any special provisions;
- FAA Form 7711-2;
- Letter of disapproval of the application;
- Letter of nonacceptance of the operations manual;
- Accepted operations manual;
- Letter indicating an unsatisfactory facility inspection;
- Completed Part 91 Minimum Safe Altitude Waiver and Facility Inspection Job Aid (discard after PTRS entries are complete); and
- Any other documents of correspondence.

K. Waiver Distribution.

1) Send the originals of the following documents to the applicant:

- FAA Form 7711-1 and any special provisions;
- FAA Form 7711-2;

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- The accepted operations manual; and
- The letter of acceptance of the operations manual.

2) Send a copy of FAA Form 7711-1 and its associated provisions to other FSDOs in whose area the applicant has requested operating authority.

L. Close PTRS. Make appropriate PTRS entries.

M. Enhanced Vital Information Database (eVID). Establish a part 91 (Non-Certificated) eVID record.

3-191 TASK OUTCOMES. Completion of this task results in one or more of the following:

- A Certificate of Waiver or Authorization;
- An accepted operations manual;
- A letter of disapproval of an application;
- A completed Part 91 Minimum Safe Altitude Waiver and Facility Inspection Job Aid;
- A letter indicating the nonacceptance of an operations manual;
- A letter indicating an unsatisfactory facility inspection; and
- A letter indicating acceptance of an operations manual.

3-192 FUTURE ACTIVITIES.

- Reissue a Certificate of Waiver or Authorization;
- Cancel a Certificate of Waiver or Authorization;
- Review revisions to manual;
- Possible followup facility inspection; and
- Possible enforcement investigation.

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Figure 3-43. FAA Form 7711-2, Application for a Certificate of Waiver or Authorization

No certificate may be issued unless a completed application form has been received (14 C.F.R. 91. 101. and 105).

US Department of Transportation
Federal Aviation Administration

APPLICATION FOR CERTIFICATE OF WAIVER OR AUTHORIZATION

From Approved: O.M.B. No.2120-0027 08/31/2008

APPLICANTS - DO NOT USE THESE SPACES

Region	Date

Action
☐ Approved ☐ Disapproved – *"Explain under "Remarks"*

Signature of authorized FAA representative

INSTRUCTIONS

Submit this application in triplicate (3) to any FAA Flight Standards district office.

Applicants requesting a Certificate of Waiver or Authorization for an aviation event must complete all the applicable items on this form and attach a properly marked 7.5 series Topographic Quadrangle Map(s), published by the U.S. Geological Survey (scale 1:24,000), of the proposed operating area. The map(s) must include scale depictions of the flightlines, showlines, race courses, and the location of the air event control point, Police dispatch, ambulance, and fire fighting equipment. The applicant may also wish to submit photographs and scale diagrams as supplemental material to assist in the FAA's evaluation of a particular site. Application for a Certificate of Waiver or Authorization must be submitted 45 days prior to the requested date of the event.

Applicants requesting a Certificate of Waiver or Authorization for activities other than an aviation event will complete items 1 through 10 only and the certification, item 17, on the reverse.

1. Name of organization	2. Name of responsible person
Potomac Power	David Watt

3. Permanent mailing address	House number and street or route number	City	State and ZIP code	Telephone No.
	600 Edison Ave.	Richmond	VA 20101	804-555-0987

4. State whether the applicant or any of its principal officers/owners has an application for waiver pending at any other office of the FAA.
(Self-explanatory.)

5. State whether the applicant or any of its principal officers owners has ever had its application for waiver denied, or whether the FAA has ever withdrawn a waiver from the applicant or any of its principal officers/owners.
(Self-explanatory.)

6. FAR section and number to be waived
Section 91.119(b) and (c)

7. Detailed description of proposed operation *(Attach supplement if needed)*

(The applicant should furnish a detailed description of the operation; e.g., powerline patrol. The applicant may place this description on a separate sheet of paper and attach it to the application.)

8. Area of operation *(Location, altitudes, etc.)*
(The applicant must include a detailed description of the location, altitudes, etc. Applicant may attach a map, chart, or other depiction.)

9a. Beginning *(Date and hour)*	b. Ending *(Date and hour)*

10. Aircraft make and model (a)	Pilot's Name (b)	Certificate number and rating (c)	Home address (Street, City, State) (d)
Cessna 172	Philip Ohm	456123789	2345 Chancellorville Lane, Mechanicsburg VA
(The applicant may also submit	this information at a later date if not known	at the time of the application; however,	the inspector cannot approve the application until the
	received.)		
(The applicant must sign block 17	on the reverse side of FAA Form 7711-2.)		

FAA Form 7711 -2 (8-08) Supersedes Previous Edition

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Figure 3-43. FAA Form 7711-2, Application for a Certificate of Waiver or Authorization (Continued)

▶ *ITEMS 11 THROUGH 16 TO BE FILLED OUT FOR AIR SHOW/AIR RACE WAIVER REQUESTS ONLY.*

11. The air event will be sponsored by:

12. Permanent mailing address	House number and street or route number	City	State and ZIP code	Telephone No.

13. Policing *(Describe provisions to be made for policing the event.)*

14. Emergency facilities *(Mark all that will be available at time and place of air event.)*

☐ Physician ☐ Fire truck ☐ Other - Specify _____

☐ Ambulance ☐ Crash wagon _____

15. Air Traffic control *(Describe method of controlling traffic, including provision for arrival and departure of scheduled aircraft.)*

16. Schedule of Events *(include arrival and departure of scheduled aircraft and other periods the airport maybe open.)*

Hour (a)	Date (b)	Event (c)

If sufficient space is not available, the entire schedule of events may be submitted on separate sheets, in the order and manner indicated above.

Please Read > The undersigned applicant accepts full responsibility for the strict observance of the terms of the Certificate of Waiver or Authorization, and understands that the authorization contained in such certificate will be strictly limited to the above described operation.

17. Certification - I CERTIFY that the foregoing statements are true.

Date	Signature of Applicant

Remarks

FAA Form 7711-2 (8-08) Supersedes Previous Edition

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Figure 3-44. FAA Form 7711-1, Certificate of Waiver or Authorization

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

CERTIFICATE OF WAIVER OR AUTHORIZATION

ISSUED TO
Potomac Power

ADDRESS
600 Edison Ave., Richmond, VA

This certificate is issued for the operations specifically described hereinafter. No person shall conduct any operation pursuant to the authority of this certificate except in accordance with the standard and special provisions contained in this certificate, and such other requirements of the Federal Aviation Regulations not specifically waived by this certificate.

OPERATIONS AUTHORIZED
(Describe in detail the operations authorized by the waiver, e.g., powerline patrol. Attach separate sheets of paper if necessary.)

LIST OF WAIVED REGULATIONS BY SECTION AND TITLE
Section 91.119(b) and (c), Minimum Safe Altitudes

STANDARD PROVISIONS

1. A copy of the application made for this certificate shall be attached to and become a part hereof.
2. This certificate shall be presented for inspection upon the request of any authorized representative of the Administrator of the Federal Aviation Administration, or of any State or municipal official charged with the duty of enforcing local laws or regulations.
3. The holder of this certificate shall be responsible for the strict observance of the terms and provisions contained herein.
4. This certificate is nontransferable.

NOTE.—This certificate constitutes a waiver of those Federal rules or regulations specifically referred to above. It does not constitute a waiver of any State law or local ordinance.

SPECIAL PROVISIONS

Special Provisions Nos. 1 to 10 inclusive, are set forth on the reverse side hereof. "See Attached" ☐

This certificate is effective from (Beginning date/time) to (Ending date/time), inclusive, and is subject to cancellation at any time upon notice by the Administrator or his authorized representative.

BY DIRECTION OF THE ADMINISTRATOR

(Self-explanatory)
(Region)

Signed by the district office manager
(Signature)

(Enter the date the waiver was signed)
(Date)

but may be delegated no lower than the operations unit supervisor.
(Title)

FAA Form 7711-1 (7-74)

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Figure 3-45. Instructions for Completion of FAA Form 7711-2

1. PREPARING FAA FORM 7711-2. Blocks from FAA Form 7711-2 are discussed below for purposes of clarity and uniformity of its use. However, not all blocks on the form may be applicable to the application request. Blocks 11 through 16 apply to airshow and air race waiver requests only.

a. Blocks 1 and 2—Name of Organization/Name of Responsible Person. If you are a representative of an organization, then the organization's name should appear in block 1. Your name and title or position, as the organization's representative for application purposes, should appear in block 2. If you are not representing an organization, the term "NA" should be entered in block 1 and your name in block 2.

b. Block 3—Permanent Mailing Address. Self-explanatory.

c. Block 4—Pending Waiver Application. Self-explanatory.

d. Block 5—Denial and/or Withdrawal of Previous Application. Self-explanatory.

e. Block 6—14 CFR Section and Number to be Waived. All applicable 14 CFR sections and numbers that are to be waived for the operation to be conducted must be listed in this block. If you are unsure which 14 CFR sections will need to be waived, contact the Flight Standards District Office (FSDO) for guidance.

f. Block 7—Detailed Description of Proposed Operations. It is sufficient to use the term "pipeline patrol," "powerline patrol," etc., for a description. However, additional detailed information may be included.

g. Block 8—Area of Operation. A detailed description of any city, town, county, and/or state over which the operations will be conducted, and the minimum altitude essential to accomplish the operation, should be included in this block. The routes for powerline/pipeline operations must be depicted in cartographic or photographic form. This depiction should include every community, settlement, stadium, or other common gathering place located on either side of the route. The depiction should also include the areas where powerlines and phone lines or any other obstructions cross the route.

h. Block 9—Time Period. List the beginning dates and hours and the ending dates and hours when the operation will be conducted. The maximum time period for operations is 24 calendar-months (e.g., June 12, 1996, to June 30, 1998). The application should be submitted to the FSDO at least 45 days before the beginning date of the operation. For a one-time operation, consideration should be given to alternate dates. A request for alternate dates may prevent a delay and/or unnecessary paperwork. These alternate dates should be included in this block.

i. Block 10—Aircraft Make and Model. List the names of all pilots, their certificate numbers and ratings, full home address, and all aircraft by make and model that will be used in the operation. If the type of aircraft and/or the names of the pilots are not known at the

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time the application is submitted, the FAA will accept the application with the statement, "A list containing aircraft and/or pilot information will be furnished on [insert date]."

j. Block 11—Sponsorship. Not required.

k. Block 12—Permanent Mailing Address of Sponsor. Not required.

l. Block 13—Policing. Not required.

m. Block 14—Emergency Facilities. Not required.

n. Block 15—Air Traffic Control. Not required.

o. Block 16—Schedule of Events. Not required.

p. Block 17—Certification. As the applicant or an organization's representative, you must sign in this block and any pages that are attached as part of the application.

Figure 3-46. Part 91 Operations Manual Development Guide

The operations manual must contain, but is not limited to, the following items:

1. Area of Operation.

   a. The area must be depicted cartographically or photographically.

   b. Specific routes must be highlighted and must identify communities, settlements, stadiums, etc., where people may gather within one quarter mile on either side of the route. The ingress and egress routes must be identified.

   c. Each hazardous area along each route, such as phone lines, powerlines, cables, towers, etc., must be depicted.

2. Emergency Procedures. Specify procedures for emergency notification of company officials when compromise of powerline/pipeline is observed. The manual must describe in detail how the pilot will notify the company officials or ground personnel if it is necessary to safeguard human life. Some examples of acceptable notification would be:

   a. Streamer drop; and

   b. Radio call or radio monitor by company officials.

3. Aircraft Certification and Airworthiness.

   a. List all aircraft according to category-standard, limited, or restricted. All the requirements of 14 CFR part 91, §§ 91.7 and 91.203 must be met, as applicable.

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b. The manual must describe the inspection program required by 14 CFR parts 43 and 91 for the aircraft being operated. Administrative control of the maintenance inspection program must also be described, including the assignment of duties and responsibilities.

4. Personnel. The manual must include the following minimum pilot knowledge and experience requirements:

a. Each pilot must hold a commercial or airline transport pilot certificate with ratings appropriate to the category and class of airplane to be used.

b. Each pilot must have 500 hours as pilot in command (PIC).

c. Each pilot must have 100 hours in the category and class of aircraft to be used.

d. Each pilot must have 25 hours as PIC in the category and class of aircraft to be used.

e. The pilot must have 5 hours as PIC of the make and model aircraft to be used in the operation.

f. If more than one pilot will be used under the terms and conditions of the waiver, the manual must designate a chief pilot. The chief pilot must ensure that all pilots meet the minimum initial flight requirements before acting as PIC under the waiver. The minimum initial flight requirements are as follows:

(1) Route qualification, which includes a flight check over the designated route or routes to be flown and a logbook endorsement reflecting that experience;

(2) Aircraft performance and limitations;

(3) Emergency procedures included in the waiver terms and conditions; and

(4) The contents of the operations manual.

g. The chief pilot must examine each pilot at least once every 12 calendar-months, through the use of oral and practical testing, on:

(1) Route familiarization;

(2) Aircraft performance and limitations;

(3) Emergency procedures;

(4) The operations manual; and

(5) Terms and conditions of the waiver.

5. Flight Operations. The manual must contain a flight operations section covering information necessary for the waiver compliance, including the following:

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a. Weather conditions—limited to visual flight rules (VFR).

b. Operations in controlled airspace—The terms of the waiver may not be exercised in controlled airspace unless authorization has been received by the appropriate air traffic facility.

c. If the applicant requests operations within less than 500 feet altitude and/or 500 feet lateral clearance, the following procedures must be described:

(1) Approach and departure path;

(2) Emergency procedures; and

(3) Pattern and altitude to be flown which will permit single-engine aircraft to land in an emergency without endangering persons or property on the surface.

d. A plan for ensuring the update of all operations manuals when amendments have been accepted by the FAA Flight Standards District Office (FSDO).

e. An agreement specifying that a copy of the waiver must be onboard each aircraft during operation. As a minimum, the manual will be available at the main base of operations and at each satellite base.

Figure 3-47. Sample Letter of Disapproval of an Application

FAA Letterhead

[Date]

[Applicant's name and address]

Dear [name of applicant]:

This letter is to inform you that the application you submitted on [indicate date] has been disapproved for the reasons listed in the "Remarks" section of FAA Form 7711-2.

Please make the corrections noted and return to this office within 15 days of receipt of this letter.

If you have any questions or comments please feel free to contact this office at the following telephone number [indicate number].

Sincerely,

[POI's signature]

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Figure 3-48. Sample Letter of Nonacceptance of an Operations Manual

FAA Letterhead

[Date]

[Applicant's name and address]

Dear [name of applicant]:

This letter is to inform you that the operations manual you submitted on [indicate date] has not been accepted for the reasons listed in the "Remarks" section of FAA Form 7711-2.

Please make the corrections noted and return to this office within 15 days of receipt of this letter.

If you have any questions or comments please feel free to contact this office at the following telephone number [indicate number].

Sincerely,

[POI's signature]

Figure 3-49. Sample Letter of Acceptance of an Operations Manual

FAA Letterhead

[Date]

[Applicant's name and address]

Dear [name of applicant]:

This letter is to inform you that the operations manual you submitted with FAA Form 7711-2 on [indicate date] has been accepted.

Any revisions to the accepted operations manual must be submitted to this office for review. Revisions should not be distributed before this office has accepted the revisions.

If you have any questions or comments please feel free to contact this office at the following telephone number [indicate number].

Sincerely,

[POI's signature]

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Figure 3-50. Part 91 Minimum Safe Altitude Waiver and Facility Inspection Job Aid

OPERATOR _____

LOCATION _____

DATE COMPLETED _____

CHECK	S	U	N/A
District Office: 1. Review application, determine if Operations Manual is required.			
2. If not, see a., if yes, see b., below			
a. Brief applicant on: (1) Route map, approach/departure paths for single engine			
(2) EPA statement			
(3) Pilot experience requirements for: initial/annual training training records chief pilot duties			
(4) Aircraft category requirements restricted category operating limitations and possible waiver			
(5) Controlled airspace operations			
(6) Pilot notification procedures in the event of special circumstances.			
b. Issue guide for manual development			
3. Review Operations Manual: a. Minimum altitude			
b. Area of operation depicts settlements, powerlines, etc.			
c. Aircraft notification			
d. Aircraft inspection program			
e. List of personnel; experience; ratings; fulfills hours requirements; pilot training program			
f. Flight Operations; VFR; flight under 500 feet; flight in controlled air-space; entry and departure paths; special circumstances			
g. Procedures to safeguard human life			
h. Manual status: control page, revision page, changes to manual			
i. List of Special Provisions			
4. Determine applicable "standard" special provisions			
PAGE TWO CHECK	**S**	**U**	**N/A**
5. Base Inspection			
a. Review pilot records/certificates			
(1) Certificate type			
(2) Medical (Class II, current)			
(3) Training records			
(4) Route map - ingress/egress routes			
(5) Special equipment			
6. Develop additional special provisions as needed			

REMARKS:

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Figure 3-51. Sample Letter of an Unsatisfactory Inspection

FAA Letterhead

[Date]

[Applicant's name and address]

Dear [name of applicant]:

This letter is to inform you that the following discrepancies were found during the facility inspection on [indicate date]:

[List discrepancies]

Please make corrections of the noted discrepancies within 15 days of receipt of this letter. Please notify this office when corrections have been made so that a followup inspection can be scheduled. If you have any questions or comments please feel free to contact this office at the following telephone number [indicate number].

Sincerely,

[POI's signature]

RESERVED. Paragraphs 3-193 through 3-210.

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VOLUME 3 GENERAL TECHNICAL ADMINISTRATION

CHAPTER 14 PUBLIC AIRCRAFT

Section 2 Public Aircraft Operations and Surveillance Government Aircraft Operations Versus Civil Aircraft Operations

3-556 PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) ACTIVITY CODES. Reserved.

3-557 OBJECTIVE. This chapter contains guidance and information for aviation safety inspectors (ASI) assigned to or working with government-owned aircraft, or public aircraft, as defined in Title 49 of the United States Code (49 U.S.C.), § 40102(a)(41).

3-558 GENERAL. On October 25, 1994, the President signed the Independent Safety Board Act Amendments, which contained a major change in the definition of public aircraft. Public aircraft are exempt from many types of Federal Aviation Administration (FAA) regulations. The current edition of Advisory Circular (AC) 00-1.1, Government Aircraft Operations, includes the FAA's interpretation of key statutory terms in reference to the new definition. The AC will assist operators of government-owned aircraft in determining whether their aircraft operations are public aircraft operations under the definition. It is important for ASIs to obtain the AC and understand its contents.

3-559 STATUTORY PROVISIONS. Under the statute, which became effective April 23, 1995, many former public aircraft operations may now be subject to the regulations applicable to civil aircraft operations. For example, aircraft used to transport passengers will, in some circumstances, no longer be considered public aircraft. Unless they receive an exemption from the Administrator, the operators of such aircraft will need to meet civil aircraft requirements such as those pertaining to certification, maintenance, and training.

A. Aircraft owned and operated by the Armed Forces and the intelligence agencies of the United States will retain their public aircraft status unless operated for commercial purposes.

B. Except as provided in the current edition of AC 00-1.1, Chapter 1, subparagraphs 2g through i, government-owned aircraft operators transporting passengers or transporting property for commercial purposes will now be required to operate in accordance with the applicable regulations.

C. It is still considered a public aircraft operation when government-owned aircraft operators transport (for other than commercial purposes) crewmembers or other persons aboard the aircraft whose presence is required to perform, or whose presence is associated with the performance of, a governmental function such as firefighting, search and rescue, law enforcement, aeronautical research, or biological or geological resource management. It is not sufficient to show that the passengers are being transported to perform one of the governmental functions; the use of the aircraft must be necessary for the performance of the mission.

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3-560 EXEMPTIONS. Field office personnel have no authority to allow government operators to conduct operations that do not comply with the regulations. A government agency may, in appropriate circumstances, seek either a regulatory or statutory exemption. An applicant for an exemption should be directed to follow the exemption process set forth in Title 14 of the Code of Federal Regulations (14 CFR) part 11. Agencies that apply for statutory exemptions are required to show that they have an acceptable aviation safety program (ASP) to ensure safe operations. The ASP should be submitted with the petition for exemption by following the procedures outlined in part 11. The Flight Standards District Office (FSDO) has jurisdiction over the applicant's operation and will be asked to review the safety program and give an opinion on whether the program meets the requirements for issuing the exemption. The FSDO will be expected to provide written justification for its recommendations.

3-561 ASSISTANCE. Regional coordinators have been selected to assist in answering questions concerning this issue and may be contacted through the ASI's Regional Office (RO). Until further notice, questions concerning enforcement and legal interpretations will be forwarded to the Washington headquarters (HQ). Regional coordinators will forward questions to either the Aircraft Maintenance Division (AFS-300) or the General Aviation and Commercial Division (AFS-800).

3-562 TYPE CERTIFICATION INQUIRIES. Questions concerning type certification, including Supplemental Type Certificates (STC), should be directed to the operator's local FSDO.

3-563 AIRWORTHINESS CERTIFICATION. Any requests for airworthiness certification should be handled in accordance with the guidance provided in the current edition of FAA Order 8130.2, Airworthiness Certification of Aircraft and Related Products. Original airworthiness certification requests should be directed to the appropriate Manufacturing Inspection District Office (MIDO) for handling. If the MIDO cannot support the request, the FSDO may accomplish the certification after a letter of delegation has been received from the MIDO as described in Order 8130.2.

3-564 AIRCRAFT USED FOR DUAL PURPOSES. Government agencies may conduct both public and civil aircraft operations with the same aircraft. However, the operator will be required to maintain the aircraft in accordance with the appropriate regulations applicable to civil aircraft operations. Aircraft that hold airworthiness certificates should be handled as follows:

A. If the operation is a public aircraft operation and no modifications are made to the aircraft, the airworthiness certificate may be displayed in the aircraft as required by 14 CFR part 91, § 91.203(b).

B. When the public aircraft operation involves altering the aircraft temporarily, it is not necessary for the operator to surrender the airworthiness certificate or remove it from the aircraft. However, an inspection and logbook entry will be required prior to the aircraft operating as a civil aircraft. For example, when the public aircraft operation requires the removal of a door during the public aircraft operation, an authorized individual must perform the door installation and return to service before the aircraft is operated as a civil aircraft.

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C. When the modification is substantial and involves more than the simple removal and/or installation of equipment, the operator should obtain the required FAA approval before conducting civil aircraft operations. Where the modification is such that it permanently invalidates the airworthiness certificate of the aircraft, the FSDO should seek the voluntary surrender of the certificate. If the aircraft owner refuses to surrender the certificate, the FSDO should follow the procedures in the current edition of FAA Order 2150.3, FAA Compliance and Enforcement Program.

D. The FAA has allowed a certificate holder that also conducts public aircraft operations to retain the aircraft on its operations specifications (OpSpecs) when certain requirements have been met. Generally, those requirements necessitate that the FAA approves permanent installations and modifications. Temporary alterations must be corrected and the appropriate inspection and maintenance entries must be made before the aircraft is returned to service.

3-565 SURVEILLANCE.

A. Government-owned aircraft operators holding any type of FAA certification will be included in the normal surveillance activities such as spot inspections of the aircraft and aircraft records. This includes any aircraft exclusively leased to the Federal Government. Any aircraft or operation certificated by the FAA is subject to this surveillance regardless of whether they are operating as public or civil. For example, if an operation is considered public and the operator holds an airworthiness certificate, its maintenance records are eligible for review. If an ASI encounters an operator that states it is operating under public status and the ASI has questions concerning that operation, contact the regional public aircraft coordinator for assistance.

B. Government-owned aircraft operators that are conducting public aircraft operations should be included in the FSDO's annual planned surveillance activities to ensure that the operator's status remains unchanged.

3-566 GOVERNMENTAL FUNCTIONS. Not all activities conducted by government agencies are considered governmental functions within the meaning of the new definition. The accepted functions include "firefighting, search and rescue, law enforcement, aeronautical research, or biological or geological resource management," or other comparable functions. In each instance, the use of an aircraft must be necessary to perform the function. In some cases, training flights may be considered acceptable where the training is being performed aboard aircraft that is necessary for the performance of the training. AC 00-1.1 provides examples of situations that may be encountered by the field ASI. If an ASI has any questions regarding other functions comparable to those listed above or the nature of an operation, the ASI should seek assistance from the regional coordinator.

3-567 PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. Successful completion of the appropriate Airworthiness Indoctrination course(s).

B. Coordination. This task may require coordination between Maintenance, Avionics, and Operations ASIs.

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3-568 REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions):

- AC 00-1.1, Government Aircraft Operations.
- Title 49 U.S.C. §§ 40102(a)(41) and 40125.

B. Forms. None.

C. Job Aids. None.

3-569 PROCEDURES.

A. FSDO managers should ensure that a site visit is held with each government agency in their geographic area. This visit is necessary to determine whether the agency conducts operations that are subject to the regulations applicable to civil aircraft operations. Upon determining that a government agency will be required to conduct its aircraft operations as civil aircraft, the FSDO should assist the government agency in meeting the requirements of 14 CFR. Additionally, the FSDOs should provide the maximum assistance and advice to agencies that desire to operate in accordance with 14 CFR while conducting public aircraft operations.

B. Any government-owned aircraft that is not operated as a public aircraft will need to comply with all the appropriate certification, maintenance, and operating rules that apply to civil aircraft operations. For example, if the aircraft does not have a current inspection as required by § 91.409, it may not operate until the required inspection is accomplished.

3-570 PTRS. Each responsible field office will verify that all PTRS entries associated with government-owned aircraft include either the word “public” (exclusively used in public operations) or the word “civil” (civil operations) as the first characters in the National Use field. If the operator has both public and civil operations, enter “civil” in the National Use field. The PTRS activity codes for government-owned aircraft will be the same as those entries for identical activities involving civil aircraft. For example, if a government agency operating an SD3-30 contacts the FSDO and it is determined that the operator should be operating under 14 CFR part 135, then the ASI would open the PTRS using either activity code 3207 or 1213 and enter “civil” in the National Use field.

A. To monitor compliance with the rule, PTRS entries should be recorded for every contact with operators of government-owned aircraft.

B. After determining that a government-owned aircraft operator must meet the requirements for civil aircraft operations, standard PTRS codes should be used for the type of activity or surveillance being conducted. When accomplishing site visits on public operators who remain public, the inspector may use PTRS codes 1470, 3470, and 5470. These codes have been changed and do not require a 14 CFR entry. All other activities in association with public operators should use the same activity codes (1470, 3470, and 5470) and then enter the applicable PTRS activity code in the tracking block.

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C. Using the Civil Aviation Registry to monitor the implementation of this change, it is critical to enter the "N" number into the Aircraft Registration Number block. The "N" number for each aircraft operated by the government agency should be entered into the initial PTRS action for that agency. If more than one aircraft is operated, enter the additional registration numbers in the comment section using opinion code "I" and comment code "816."

D. Government operators who are operating their aircraft under part 91 are to have a 14 CFR part 125 deviation designator assigned to them by the Aviation Data Systems Branch (AFS-620) and tracked in the enhanced Vital Information Database (eVID) in this manner. The assignment of a part 125 deviation designator is for tracking purposes only; they are not deviation holders.

3-571 TASK OUTCOMES. Complete the PTRS record.

3-572 FUTURE ACTIVITIES. None.

RESERVED. Paragraphs 3-573 through 3-590.

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VOLUME 3 GENERAL TECHNICAL ADMINISTRATION

CHAPTER 19 TRAINING PROGRAMS AND AIRMAN QUALIFICATIONS

Section 1 Scope, Concepts, and Definitions

3-1071 TRAINING PROGRAM OVERVIEW. 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 training programs.

A. 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, 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 certificate holder (with the exception of a part 135 operator using a single pilot or only one pilot in command (PIC) in its operation) must obtain FAA approval of the curriculums used for training flightcrew members, instructors, check airmen, and aircraft dispatchers. The operator is responsible for ensuring that its training program is complete, current, and in compliance with the regulations. (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 Approval. It is the policy of 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 crewmembers and dispatchers can competently perform their assigned duties before they are authorized to enter revenue service. POIs are empowered by AFS to use discretion, allow latitude, and exercise judgment concerning the details of training program approval and training techniques that operators use.

3-1072 DEFINITIONS. The following terms are used throughout this chapter and are defined as follows:

A. Training Program. A system of instruction which includes curriculums, facilities, instructors, check airmen, 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 crewmember and dispatcher remains adequately trained for each aircraft, duty position, and kind of operation in which the person serves.

B. 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 curriculums. 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.

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C. Categories of Training. The classification of instructional programs by the regulatory requirement the training fulfills. Categories of training consist of one or more curriculums. The categories of training are initial new-hire, initial equipment, transition, upgrade, recurrent, and requalification.

D. Curriculum. A complete training agenda specific to an aircraft type, a crewmember or dispatcher 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.

E. 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.

F. Training Module. A subpart of a curriculum segment which constitutes a logical, self-contained unit. A module contains elements or events which 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.

G. 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.

H. 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.

I. Checking and Qualification Module. 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 and an operating experience (qualification) module.

J. 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.

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K. Instructional Delivery Methods. Methodology for conveying information to a student. his may include lectures, demonstrations, audiovisual presentations, programmed and directed self-study workshops, and drills. Training devices, simulators, aircraft, and computer workstations are also considered instructional delivery methods.

L. 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.

M. 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. A training hour includes time for normal breaks, usually 10 minutes each hour. Lunch breaks are not included.

N. Programmed Hours. The hours specified in part 121 for certain categories of training (initial new-hire, initial equipment, and recurrent). Programmed hours are specified in curriculum segment outlines in terms of training hours.

O. Duty Position. The functional or operating position of a crewmember or aircraft dispatcher. For part 121 and 135 operations, duty positions are PIC, second in command (SIC), FE, Flight Attendant (F/A), flight navigator, and aircraft dispatcher.

P. Training/Checking Month (Base Month). The calendar-month during which a crewmember or aircraft dispatcher is due to receive required recurrent training, a required flight check, a required competency check, or required operating familiarization. Calendar-month means the first day through the last day of a particular month.

Q. 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 crewmember or aircraft dispatcher must receive recurrent training, a flight check, or a competency 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 and is due in the training/checking month of the following year.

R. Initial Approval. An FAA letter that conditionally authorizes an operator to begin instruction to qualify personnel 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.

S. 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.

3-1073 AIRCRAFT FAMILIES. There are five basic families of aircraft used in part 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 crewmembers are significantly different for each family of aircraft. Within each aircraft family, however, the ground and flight training requirements are similar, even though

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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 Special Federal Aviation Regulations (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 CAR 4, 4A, and 4B and SR 422, 422A, and 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 Aero Bulletin 7A (DC-3, L-18, C-46) known as large, non-transport 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. This aircraft family consists of turbopropeller airplanes and those airplanes certified under part 23 in the normal category. In accordance with part 135, § 135.293(b), certain airplanes of particular make and model have been determined to be equivalent to other models in a series. Airplanes of an equivalent series may be considered a single type for purposes of training and checking.

NOTE: In cases where an operator requests approval to use one or more flight simulation training device (FSTD), 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 part 135, § 135.323(e) and part 121, § 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. Equivalent Series of the Multiengine, Turbopropeller, and SFAR Airplane Family

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. This aircraft family includes all multiengine airplanes certified for operations with 9 or less passenger seats and not more than

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12,500 pounds maximum takeoff weight (MTOW). It does not include any airplanes certified in the transport or commuter category regardless of the MTOW. Crewmembers 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 V1 cuts. This type of operation may require specific training, such as seaplane operations.

Table 3-34. Equivalent Series of the Multiengine, General-Purpose Airplane Family

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. Crewmembers 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 ski plane 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 turboprop 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.

A. Elements of a Training Program. Some elements of a training program are depicted in Figure 3-68, Schematic Depiction of Training Programs, to show the relationship between the total training program and the categories of training, curriculums, curriculum segments, and training modules. 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:

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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., courseware and check airmen), while others are accepted as essential supporting elements (e.g., facilities and equipment).

2) Part B illustrates the six categories of training that are recognized by the FAA.

3) Part C is an example of a curriculum which is a complete agenda of training specific to an aircraft type and crewmember or dispatcher 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 simulator lesson number 4.

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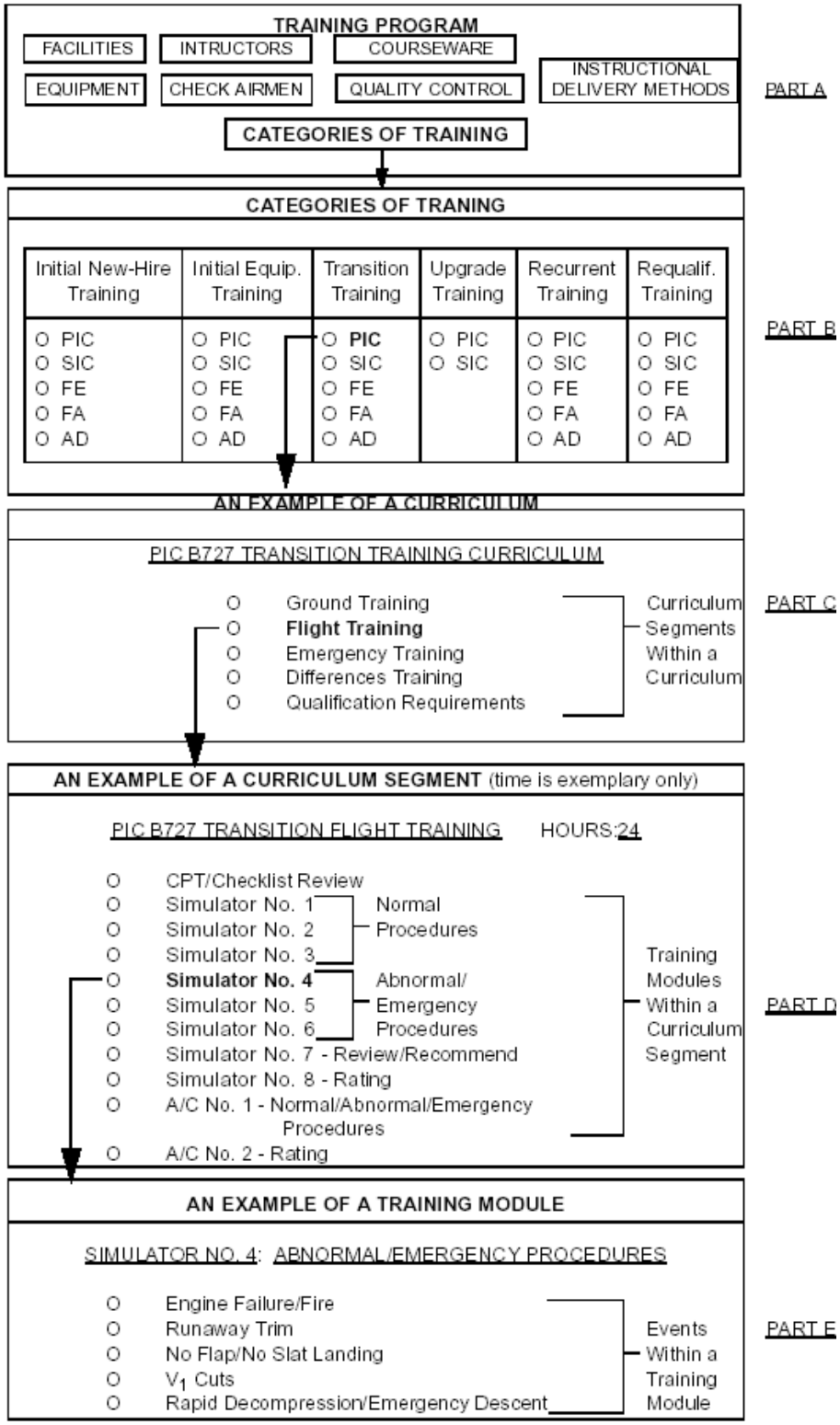
Figure 3-68. Schematic Depiction of Training Programs



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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. Each category of training consists of one or more curriculums, each one of which is specific to an aircraft type and a duty position (for example: 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 handbook. POIs should encourage operators to use this nomenclature when developing new training curriculums or revising existing training curriculums. 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 not had previous experience with the operator (newly hired personnel). It also applies, however, to personnel employed by the operator who have not previously held a crewmember or dispatcher 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 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 crewmember is being reassigned in one of the following circumstances:

a) Reassignment is to any duty position on an airplane of a different group (Group I is reciprocating and turbopropeller powered and Group II is turbojet powered).

b) Reassignment is to a different duty position on a different airplane type when the flightcrew member has not been previously trained and qualified by the operator for that duty position and airplane type.

2) For part 135 operations, the crewmember is being reassigned in one of the following circumstances:

a) Reassignment is to a different duty position on a different aircraft type and the crewmember has not been previously trained and qualified by the operator for that duty position and aircraft type.

b) Reassignment is to an aircraft of a category or class for which the crewmember has not previously qualified with that operator.

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C. Transition Training. This category of training is for an employee who has been previously trained and qualified for a specific duty position by the operator and who is being assigned to the same duty position on a different aircraft type. For part 121 operations, the different type aircraft must be in the same group. If it is not in the same group, initial equipment training is the applicable category of training.

D. Upgrade Training. This category of training is for an employee who has been previously trained and qualified as either SIC or FE by the operator and is being assigned as either PIC or SIC, respectively, to the same aircraft type for which the employee was previously trained and qualified.

E. Recurrent Training. This category of training is for an employee 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 to maintain currency.

F. Requalification Training. This category of training is for an employee who has been trained and qualified by the operator, but has become unqualified to serve in a particular duty position and/or aircraft due to not having received recurrent training and/or a required flight 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.

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 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 assigned by the operator to a different duty position and/or aircraft type must complete either 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

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the appropriate category of training for normal crewmember 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

This table illustrates categories of training.

		PIC (A)	PIC (B)	SIC (A)	SIC (B)	FA (A)	FA (B)
CURRENT DUTY POSITION	PIC A	R*	T	R	I	-	-
	PIC B	T	R*	I	R	-	-
	SIC A	U	I	R*	T	-	-
	SIC B	U	U	T	R*	-	-
	F/A A	-	-	-	-	R*	T
	F/A B	-	-	-	-	T	R*
		Required Categories of Training: T = Transition Training I = Initial Equipment Training U = Upgrade Training R = Requalification Training R* = Requalification required if person has become unqualified					

TABLE KEY:

PIC = pilot in command
SIC = second in command
F/A = Flight Attendant
(A) = A specific aircraft (different from B)
(B) = A specific aircraft type (different from A)

EXAMPLE:

1. Current duty position is SIC on aircraft type A. Person is assigned to PIC duty position type on same aircraft type. Upgrade Training is required.

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Figure 3-69. Categories of Training In Part 121 Operations

	PIC 1A	PIC 1B	PIC 2A	PIC 2B	SIC 1A	SIC 1B	SIC 2A	SIC 2B	FE 1A	FE 1B	FE 2A	FE 2B	FA 1A	FA 1B	FA 2A	FA 2B	AD 1A	AD 1B	AD 2A	AD 2B
PIC 1A	R*	T	I	I	R	I	I		R/I	I	I	I								
PIC 1B	T	R*	I	I	I	R	I	I	I	R/I	I	I								
PIC 2A	I	I	R*	T	I	I	R	I	I	I	R/I	I								
PIC 2B	I	I	T	R*	I	I	I	R	I	I	I	R/I								
SIC 1A	U	I	I	I	R*	U	I	I	R/I	I	I	I								
SIC 1B	I	U	I	I	T	R*	I	I	I	R/I	I	I								
SIC 2A	I	I	U	I	I	I	R*	I	I	I	R/I	I								
SIC 2B	I	I	I	U	I	I	T	R*	I	I	I	R/I								
FE 1A	I	I	I	I	U	I	I	I	R*	T	I	I								
FE 1B	I	I	I	I	I	U	I	I	T	R*	I	I								
FE 2A	I	I	I	I	I	I	U	I	I	I	R*	T								
FE 2B	I	I	I	I	I	I	I	U	I	I	T	R*								
FA 1B													R*	T	I	I				
FA 1B													T	R*	I	I				
FA 2A													I	I	R*	T				
FA 2B													I	I	T	R*				
AD 1A																	R*	T	I	I
AD 1B																	T	R*	I	I
AD 2A																	I	I	R*	T
AD 2B																	I	I	T	R*

Required categories of Training: I - Initial Equipment Training, T - Transition Training, U - Upgrade Training.
R - Requalification Training R* - Requalification Training required if person has become unqualified.
R/I - Requalification Training if previously qualified for the duty position or Initial Equipment Training required if not previously qualified for the duty position.

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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 a crewmember by that operator. Abbreviated curriculum segment outlines of initial new-hire training may apply to merger or air carrier acquisition situations (see Volume 3, Chapter 34, Section 1).

3-1077 CURRICULUM DEVELOPMENT. Operators must develop one or more curriculums for each category, specific duty position, and aircraft type in which the operator conducts training.

A. Required Curriculums. The operator is required to develop and maintain only those curriculums 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 curriculums 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. Types of Single-Engine, General-Purpose Airplanes. A part 135 operator may consider all makes and models of airplanes of the single-engine, general-purpose family (except turbine-powered airplanes) as a single *type* when determining the need to construct a curriculum (see paragraph 3-1073).

C. Types of Multiengine, General-Purpose Airplanes. A part 135 operator may consider all multiengine, general-purpose airplanes or turbopropeller and SFAR airplanes of an equivalent series as an airplane *type* when determining the need to construct a curriculum (see paragraph 3-1073). Operators must provide differences training to qualify crewmembers in different models of aircraft considered the same “type” for this purpose.

D. Types of Transport Category, Commuter Category, and Turbine Airplanes. An operator may consider each model of transport category, commuter category, turbine-powered airplane, or helicopter as a *type* when determining the need to construct a curriculum. Operators must provide differences training to qualify crewmembers in different models of aircraft considered the same *type* for this purpose.

E. Multiple Curriculums of a Single Category. Operators may develop and have multiple curriculums approved for any single duty position and aircraft type. For example, an operator may have one initial new-hire curriculum approved for pilots with minimum hours and without any previous revenue experience. A second curriculum could then be approved for pilots previously qualified in service in the type of aircraft for which training is being conducted. Operators that develop multiple curriculums must carefully specify the qualifications of students in each curriculum. Some acceptable means that operators may use include the following:

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- Documentation such as training records from previous employers showing the extent and scope of previous training; and
- Validated pretesting.

F. 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. Other information is not necessary, and POIs should discourage operators from including it. 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).

G. 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 CURRICULUM SEGMENTS. Curriculum segments which make up a curriculum depend upon the category of training and the duty position. The curriculum segments which must be included in each curriculum for each category of training are outlined in Figure 3-70, Categories of Training, Curriculums, and Curriculum Segments. Each curriculum consists of specific curriculum segments. A curriculum segment consists of a group of broadly related training subjects and activities based on regulatory requirements. Curriculum segments are titled as follows:

- Basic Indoctrination - part 121, § 121.415(a)(1) or part 135, § 135.329(a)(1);
- Aircraft Ground Training - §§ 121.419 through 121.422 or § 135.329(a)(2);
- Emergency Training - § 121.417 or § 135.331;
- Flight Training - §§ 121.424 through 121.426 or § 135.329(b);
- Special Curriculum Segment - Various rules depending on the operation;
- Hazardous Materials (Carriage or Non-Carriage) - §§ 121.1001 through 121.1007 or §§ 135.501 through 135.507; and
- Qualification Segment - part 121 subpart O or §§ 135.293 through 135.299.

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Figure 3-70. Categories of Training, Curriculums, and Curriculum Segments

		CATEGORIES OF TRAINING																										
		INITIAL NEW-HIRE TRAINING					TRAINING FOR CREWMEMBERS/DISPATCHERS PREVIOUSLY QUALIFIED BY THE OPERATOR																					
							INITIAL EQUIPMENT TRAINING					TRANSITION TRAINING					UPGRADE TRAINING		RECURRENT TRAINING					REQUALIFICATION TRAINING **				
		CURRICULUMS FOR SPECIFIC DUTY POSITIONS AND AIRCRAFT																										
		PIC	SIC	FE	FA	AD	PIC	SIC	FE	FA	AD	PIC	SIC	FE	FA	AD	PIC	SIC	PIC	SIC	FE	FA	AD	PIC	SIC	FE	FA	AD
CURRICULUM SEGMENTS	BASIC INDOCTRINATION	○	○	○	○	○																						
	AIRCRAFT GROUND TRAINING	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	EMERGENCY TRAINING	○	○	○	○		○	○	○	○									○	○	○	○		○	○	○	○	
	FLIGHT TRAINING	○	○	○			○	○	○			○	○	○			○	○	* ○	* ○	* ○			○	○	○		
	DIFFERENCES TRAINING (IF APPLICABLE)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
	SPECIAL SEGMENT (IF APPLICABLE)	THIS CURRICULUM SEGMENT VARIES WITH THE COMPANY'S OPERATIONAL NEEDS OR AUTHORIZATIONS (CAT II LR NAV, ETC.)																										
	QUALIFICATIONS SEGMENT																											
	○ APPROPRIATE FLIGHT CHECK	○	○	○			○	○	○			○	○	○			○	○	○	○	○			○	○	○		
	○ COMP CHECK				○	○				○	○				○	○						○	○				○	○
	○ IOE	○	○	○	○		○	○	○	○		○	○	○	○		○	○										
	○ FAM FLIGHT					○					○					○							○					○
	○ LINE CHECK	○					○					○					○		○					○				

* A proficiency check may be substituted for the recurrent flight training curriculum segment (see Volume 3, Chapter 2, Section 7).
**The curriculum segments for requalification training depends upon the period of time the crewmember/dispatcher has been unqualified (see Volume 3, Chapter 2, Section 11).

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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. When the phrase "training module" is used, it refers to the complete courseware and instructional delivery method used by the operator to convey the information required in the training module outline. The phrase "training module outline," as used in this handbook, refers to the outline of a module incorporated in a curriculum segment for submission to the FAA for purposes of approval.

A. Example Training Module Outlines. Operators should present training modules to the POI in outline form for initial approval. The following 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

Electrical System → TITLE OF TRAINING MODULE

- O Systems Overview
- O AC Power
- O DC Power
- O Standby Power
- O AMU Generator
- O External Power
- O Power Distribution
- O Circuit Protection
- O Controls and Indicators
- O Limitations
- O Normal Procedures
- O Abnormal and Emergency Procedures

→ *ELEMENTS WITHIN A TRAINING MODULE*

Table 3-37. Example of Related "Events" in a Flight Training Module Outline

1st Simulator Period → TITLE OF TRAINING MODULE

- O Use of Checklist
- O Engine Starts and Powerplant Checks
- O Taxi
- O Normal Takeoffs
- O Area Departure
- O Holding Patterns
- O Descent and Area Arrival
- O IFS Approaches (all engines)
- O Normal Landings

→ *ELEMENTS WITHIN A TRAINING MODULE*

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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 later 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 instruction begins and must, therefore, be evaluated as a final step in the approval process. Excessive detail is neither necessary nor helpful to the POI during the initial approval process.

1) In the development of a training module, the operator may consider the students' previous experience and training. Previous experience considerations include:

- Past experience in part 121 or part 135 operations;
- Past experience with the operator's systems, methods, and procedures;
- Previous duty positions; and
- Previous experience with an aircraft type.

2) Once approved, training module outlines normally remain relatively fixed, requiring adjustment only when new elements are introduced. For example, existing training outlines require the addition of a Traffic Alert and Collision Avoidance System (TCAS) and operations modules with the introduction of TCAS.

3) One reason for excluding excessive detail from the training module outline is to allow the operator flexibility in adjusting courseware without time-consuming and unnecessary reviews on the part of the POI. During the final approval process and beyond, the operator is free to make adjustments (determined necessary on the basis of experience) to courseware that does not add or delete elements or events from the outline. POIs may also find it necessary, on the basis of surveillance reports or other information, to require the operator to modify courseware and course outlines.

C. Curriculum Segments. Curriculum segments are composed of training modules. 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 time required to present the instructional material in a curriculum segment. The amount of detail also controls the development of courseware, such as lesson plans and flight maneuvers and procedures documents.

D. Using a Module in Multiple Curriculums and Categories of Training. A single module may be used in more than one curriculum and in more than one category of training. For example, a module which 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 which places emphasis on the particular category of training.

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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 outline to cover differences in emphasis.

E. Checking and Qualification Curriculum Modules. Checking and qualification curriculum modules consist of those events required by regulation to act in revenue service without supervision.

RESERVED. Paragraphs 3-1080 through 3-1094.

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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; and
- Section 11 addresses requalification training.

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, 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 curriculums used for training flightcrew members, instructors, and check airmen. 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 part 142 training centers) may train, test or check that certificate holder’s flightcrew members, instructors, and check airmen, provided that:

- There is a pre-existing contractual or other arrangement;
- That arrangement is in the primary certificate holder’s FAA approved training program and

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- 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 of this order. Guidance for the issuance of Operations Specification (OpSpec) A031 authorizing such arrangements can be found in Volume 3, Chapter 18, Section 3.

D. Operator Training Program Approval. It is the policy of 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 are 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. Training Program. A system of instruction which includes curriculums, facilities, simulators and training devices, training equipment, instructors, check airmen, 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.

B. 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 curriculums. 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.

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 curriculums. The categories of training are initial new-hire, initial equipment, transition, upgrade, recurrent, and requalification.

D. 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.

E. 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.

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F. Training Module. A subpart of a curriculum segment which constitutes a logical self-contained unit. A module contains elements or events which 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.

G. 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.

H. 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.

I. 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 module, and a consolidation of knowledge and skills module.

J. 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.

K. 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. Training devices, simulators, aircraft, and computer workstations are also considered instructional delivery methods.

L. 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.

M. 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.

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N. Programmed Hours—Part 121. In accordance with § 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.

O. 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.

P. Duty Position. The functional or operating position of a crewmember or aircraft dispatcher. For part 121 and 135 operations, duty positions are PIC, second in command (SIC), FE, flight attendant (F/A), and aircraft dispatcher.

Q. 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.

R. 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.

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. 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.

3-1073 AIRCRAFT FAMILIES. There are five basic families of aircraft used in part 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

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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 Special Federal Aviation Regulations (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 Numbers SR 422, 422A, and 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 Aero Bulletin 7A (DC-3, L-18, C-46) known as large, non-transport 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 flight simulation training device (FSTD), 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 part 135, § 135.335 and part 121, § 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.

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Table 3-33. Multiengine Turbopropeller, and SFAR Airplane Groups for the Purposes of the § 135.293(b) Competency Check

Group	Models
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 9 or less 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 V1 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

Group	Models
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

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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 ski plane 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, curriculums, curriculum segments, and training modules. 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.

A. 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 airmen), 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 which 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 simulator lesson number 4.

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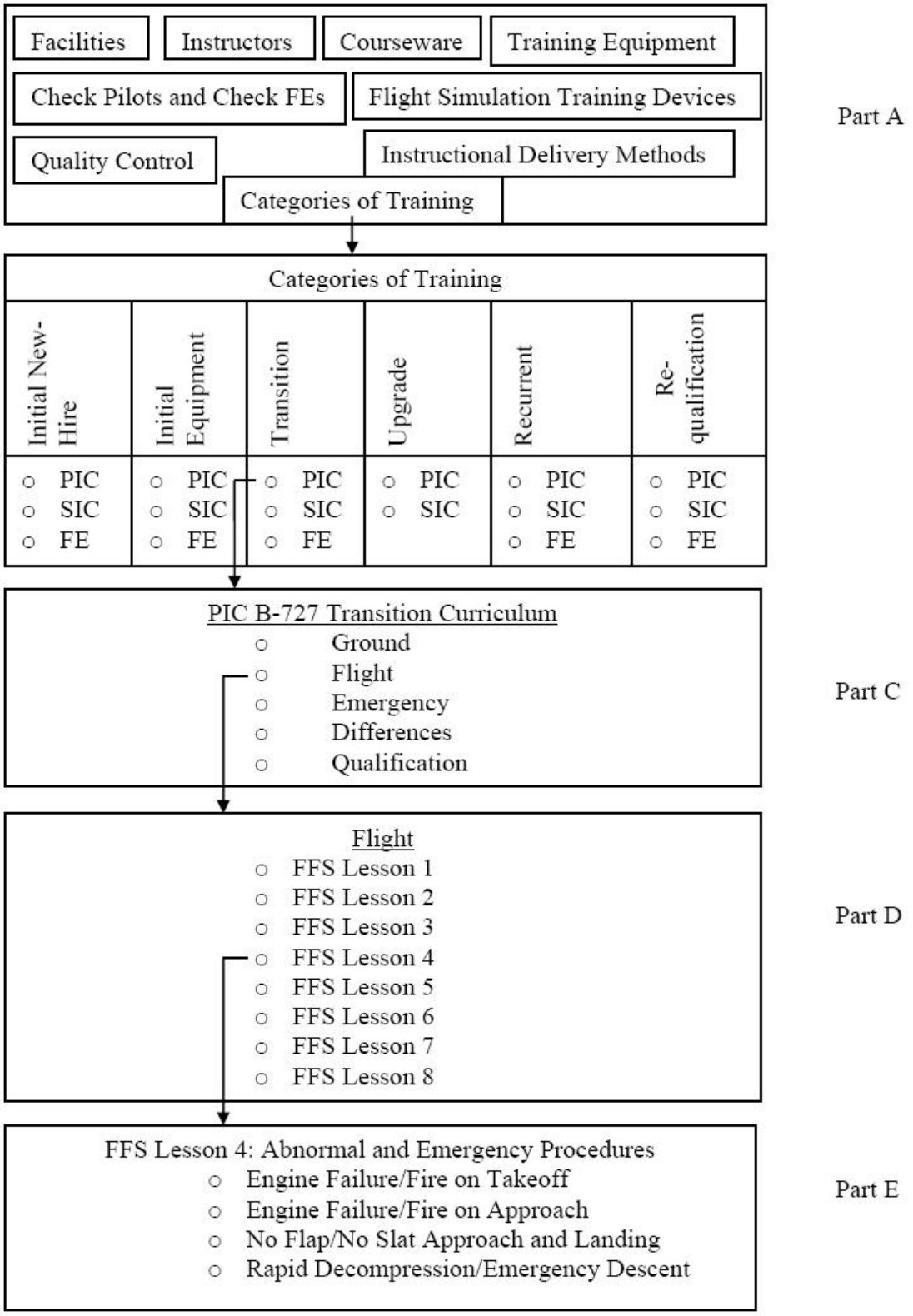
Figure 3-68. Schematic Depiction of Training Programs



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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 curriculums, each one of which is specific to an aircraft type and a duty position (for example: 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 handbook. POIs should encourage operators to use this nomenclature when developing new training curriculums or revising existing training curriculums. 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, 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, a 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, a SIC on a Cessna 400 series is reassigned as a PIC on a Beechcraft 200.

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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, a SIC on a B-737 is reassigned as a 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, a 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 either initial equipment, transition, upgrade, or requalification training, depending on the aircraft type and duty position for which they were previously qualified.

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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 Duty 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 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 SIC on aircraft type 1. Person is assigned to PIC duty position on aircraft type 1. Upgrade training is required

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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 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 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 FE on airplane type 2A. If the person was previously qualified as FE on airplane

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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 a flightcrew member by that operator.

3-1077 CURRICULUM DEVELOPMENT. Operators must develop one or more curriculums for each category, specific duty position, and aircraft type in which the operator conducts training.

A. Required Curriculums. The operator is required to develop and maintain only those curriculums 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 curriculums 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 (for example, 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. (Refer to Table 3-34 of this section 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 (for example, 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

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same group in a single curriculum for each category and duty position, provided the curriculum includes airplane specific training for each model. (Refer to Table 3-33 of this section 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 (for example, 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 which make up a curriculum depend upon the category of training and the duty position. Curriculum segments are titled as follows:

- Basic Indoctrination–part 121, § 121.415(a)(1) or part 135, § 135.329(a)(1);
- Crew Resource Management Training–§ 135.330;
- Aircraft Ground Training–§ 121.419 or § 135.345;
- Emergency Training–§§ 121.417, 121.805 or § 135.331;
- Flight Training–§§ 121.424, 121.425, Appendix E, Appendix H or § 135.347;
- Differences Training–§ 121.418 or § 135.341(b)(4)
- Special Curriculum Segment–Various Rules Depending on the Operation;
- Hazardous Materials (Will-Carry or Will-Not-Carry)–§§ 121.1001 through 121.1007, Appendix O or §§ 135.501 through 135.507 Appendix O of part 121; and
- Qualification Segment–Part 121 Subpart O, 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

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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 CURRICULUMS OF A SINGLE CATEGORY. Operators may develop and have multiple curriculums approved for any single duty position and aircraft type. These curriculums 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 curriculums 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 flight crewmember'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 curriculums 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

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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 Training (§ 135.330); and

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 operating experience) 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 curriculums, including recurrent training, for each operator. In addition, the flightcrew member must satisfactorily complete each operator's checking and qualification modules, including recurrent checking.

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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. Tables 3-36 and 3-37 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

Electrical System → TITLE OF TRAINING MODULE

O Systems Overview
O AC Power
O DC Power
O Standby Power
O AMU Generator
O External Power
O Power Distribution
O Circuit Protection
O Controls and Indicators
O Limitations
O Normal Procedures
O Abnormal and Emergency Procedures

→ *ELEMENTS WITHIN A TRAINING MODULE*

Table 3-37. Example of Related Events in a Flight Training Module Outline

1st Simulator Period → TITLE OF TRAINING MODULE

O Use of Checklist
O Engine Starts and Powerplant Checks
O Taxi
O Normal Takeoffs
O Area Departure
O Holding Patterns
O Descent and Area Arrival
O ILS Approaches (all engines)
O Normal Landings

→ *ELEMENTS WITHIN A TRAINING MODULE*

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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 their 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 Curriculums 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 which 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 which 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.

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VOLUME 3 GENERAL TECHNICAL ADMINISTRATION

CHAPTER 27 GROUND-DEICING/ANTI-ICING PROGRAMS

Section 2 Approval of Parts 121, 125 and 135 Procedures

3-2194 GENERAL. This section contains policy, direction, and guidance to inspectors for review, evaluation, and approval of deicing/anti-icing procedures. The requirements for operations in ground-icing conditions are covered in Title 14 of the Code of Federal Regulations (14 CFR) part 121, §§ 121.629 and 125.221, and part 135, § 135.227.

A. Part 121 Regulatory Requirement. Section 121.629 requires that an operator conducting operations when conditions are such that frost, ice, or snow may reasonably be expected to adhere to the aircraft must satisfy the following criteria:

- Have and use an approved aircraft ground-deicing/anti-icing program in accordance with § 121.629(c); or
- Be issued operations specification (OpSpec) A023 in accordance with § 121.629(d), which requires the operator to perform an Outside-the-Aircraft Check (OTAC) within 5 minutes prior to beginning takeoff to ensure that the wings, control surfaces, and other critical surfaces are free of frost, ice, and snow. See Volume 3, Chapter 18, Section 3 for more information about OpSpecs.

NOTE: Operators who elect to operate in accordance with § 121.629(d) must have the procedures for their OTAC in their appropriate manuals and be approved by the principal operations inspector (POI) prior to conducting operations when frost, ice, or snow may reasonably be expected to adhere to the aircraft.

NOTE: To be eligible for approval, the OTAC procedure for all aircraft must include a provision for close visual scrutiny of selected portions of all of the critical surfaces of the particular type aircraft to be checked. In addition, for hard-wing airplanes with aft, fuselage mounted, turbine-powered engines, the OTAC procedure must also include a tactile check of selected portions of the wing-leading edges and the upper wing surfaces.

B. Part 125 Regulatory Requirement. Part 125 operators are required to comply with the operating limitations of part 125, § 125.221, and the testing requirements of § 125.287. Principal inspectors (PI) will issue OpSpec A041 to authorize a pretakeoff contamination check (not necessarily outside the aircraft). A part 125 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, and operators must have appropriate procedures in their general manuals (GM) showing how they are complying with 14 CFR. If a part 125 operator chooses to operate without a pretakeoff 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 18 Section 3 for more information about OpSpecs.

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C. Part 135 Regulatory Requirement.

1) Section 135.227 restricts operations when an aircraft has frost, ice, or snow adhering to any rotor blade, propeller, windshield, wing, stabilizing or control surface, powerplant installation, or instrument system. In order to comply with § 135.227, operators must meet the applicable training requirements of §§ 135.341, 135.345, and 135.351 and comply with the following:

- Be issued OpSpec A023 (for outside the aircraft pretakeoff contamination check) in accordance with § 135.227(f), which requires the operator to perform a pretakeoff contamination check within 5 minutes prior to beginning takeoff to ensure that the wings, control surfaces, and other critical surfaces are free of frost, ice, and snow; or
- Have a Federal Aviation Administration (FAA) approved alternative procedure to determine that the airplane is free of frost, ice, or snow; or
- Have an FAA approved aircraft ground-deicing/anti-icing program in accordance with § 121.629(c) (OpSpec A023)

2) A part 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, and operators must have appropriate procedures in their GMs showing how they are complying with 14 CFR. If a part 135 operator chooses to operate without a pretakeoff 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 18 Section 3 for more information about OpSpecs.

3-2195 APPROVAL PROCESS.

A. Part 121 Operators. The approval of the part 121 operator's ground-deicing/ anti-icing program follows the five step general process for approval and acceptance outlined in Volume 3, Chapter 1, Section 1.

B. Part 125 Operators. The use of the following process for part 125 operators would be helpful, but is not required unless the operator elects to develop a deicing/anti-icing program in accordance with § 121.629(c). However, OpSpec A023 should be issued to clarify the approved deicing/anti-icing program for each part 125 operator.

C. Part 135 Operators. Part 135 deicing/anti-icing requirements are fulfilled in the completion of an approved deicing/anti-icing training program and by the issuance of OpSpec A023. Standard procedures for approval of part 135 operator training programs and the issuance of OpSpecs apply. OpSpec A041 must describe or reference pretakeoff contamination check procedures for each specific airplane type. These procedures must also be contained in the operator's GM.

D. OpSpecs paragraph A023. When an operator has met the requirements for operations in ground-icing conditions under parts 121, 125, or 135, as appropriate, the POI should issue OpSpec A023.

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E. Five Step Approval Process. Should an operator elect to develop a deicing/anti-icing program in accordance with § 121.629(c), the following standard approval process would apply. For purposes of clarity and description, the five stage process is described in this section as five separate and distinct stages. In practice, the stages may overlap, and PIs are authorized to vary the process to fit the circumstances.

F. Evaluation of Operator's Program. The approval process requires the evaluation of the operator's program by a team of inspectors, which is composed of the POI, the principal maintenance inspector (PMI), and inspectors of both operations and airworthiness specialties working under their leadership. The principal avionics inspector (PAI) will become preeminent in the approval process with the advent of icing sensors, which are currently under development, and which will offer an alternative means of determining that the aircraft is free of frost, ice, and snow.

G. Issuance of OpSpecs. At the successful conclusion of the process, the operator is issued OpSpecs that authorize the operator to conduct operations under the program when conditions exist such that frost, ice, or snow may reasonably be expected to adhere to the operator's aircraft. If a certificate holder elects to operate according to § 121.629(d), the certificate holder must be issued an OpSpec requiring an OTAC.

NOTE: An operator who is required to conduct an OTAC may deice/anti-ice the aircraft, but may not omit the checking procedures by virtue of having done so.

3-2196 PHASE ONE-INITIAL DISCUSSION. Phase one begins when the operator initially approaches the FAA to obtain approval of a ground-deicing/anti-icing program.

A. Become Familiar with Technical Problems and Regulatory Requirements. At this stage, both the FAA team and the operator must become familiar with the technical problems involved and the regulatory requirements. A discussion of these elements is contained in Advisory Circular (AC) 120-60A, Ground-deicing and Anti-icing Program, and AC 135-16, Ground-Deicing & Anti-Icing Training and Checking. Section 1 of this chapter includes a listing of documents the operator may find useful in developing a program. PIs should ensure that the operator is aware of these sources of information.

B. Outline Required Elements. The PIs should outline for the operator those elements that must be contained in the operator's proposed program and the actions that will be required at each stage of the approval process. See Volume 3 Chapter 27 Section 1 (the previous section).

3-2197 PHASE TWO-INITIAL OPERATOR SUBMISSION. Phase two begins when the operator initially submits a proposed program package. The principal inspectors' first action is to review the operator's submission to determine if each element specified in phase one is included. If the operator's initial program is incomplete, the PIs must immediately inform the operator and determine what action the operator proposes to take to complete the package. If the operator's package is complete or the PIs determine that it will soon be complete, the PIs should distribute the elements to the appropriate inspectors for a prompt initial examination. PIs should return obviously unacceptable packages to the operator with a letter outlining the deficiencies.

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A. Initial Examination. The initial examination does not include a detailed operational or technical evaluation (this analysis is conducted in phase three). The phase two examination is conducted in sufficient detail to assess the completeness of the operator's package. Inspectors assigned to complete the initial review should promptly complete the initial evaluation and inform the PIs of their findings.

B. Unacceptable Elements. At this point it is appropriate for the PIs to hold a meeting with the operator to discuss any obviously unacceptable elements of the program. Under unusual circumstances, the PIs may need to return the operator's entire package with a written statement that explains why the submission is unacceptable.

C. Initially Acceptable Package. When the operator's package is initially acceptable, the PIs should inform the operator and provide an estimate of when the operator can expect to be informed of the phase three analysis results.

3-2198 PHASE THREE-PRELIMINARY APPROVAL. Phase three consists of a detailed analysis of the operator's ground-deicing/anti-icing program, training, equipment, and facilities. Throughout phase three, inspectors and operators should expect to encounter various deficiencies. Inspectors and operators should plan to meet and work closely to agree on corrections for these deficiencies throughout phase three.

A. Document Review. The first step in phase three is a detailed review and analysis of those manual sections the operator has prepared for the ground-deicing/anti-icing program.

1) Section 121.135(a)(1) requires the manual to provide all categories of employees with sufficient instructions and information to allow them to perform their duties with a high degree of safety. Section 125.71(a) requires a current manual establishing the operator's procedures, and policies that are acceptable to the Administrator. Section 135.21(a) requires the certificate holder to prepare and keep current a manual establishing the procedures and policies, which are acceptable to the Administrator that must be used by flight, ground, and maintenance personnel.

2) The operator's GM, including those sections concerning the ground-deicing/ anti-icing program, does not require FAA approval. However, the appropriate principal inspector must review and find acceptable the appropriate sections of the manual before the FAA grants initial approval to the operator to conduct a ground-deicing/anti-icing program. The operator is granted approval by means of OpSpecs. After the operator receives initial approval of the program or procedures, the applicable PIs may require the operator to further revise manual contents.

3) See Volume 3, Chapter 32 for general guidance on review and acceptance of operator manuals, procedures, and checklists. Inspectors should ensure that the content of the operator's manual meets the following criteria:

- Identifies clearly each category of employee with responsibility for program elements;
- Defines the duties of each category of employee involved; and

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- Provides adequate background information, step-by-step procedures and, when appropriate, checklists that allow each category of employee to perform to the required standard.

NOTE: The experience gathered during deicing/anti-icing surveillance has shown that when holdover times have been exceeded, the most critical area of an operator's ground-deicing/anti-icing program is an adequate pretakeoff contamination check (OpSpec A023). It is essential for the POI to ensure that the operator's procedures offer the means for personnel to adequately determine that the aircraft is free of contamination before a takeoff during conditions when frost, ice, or snow may reasonably be expected to adhere to the aircraft. This becomes more critical if the POI authorizes the pretakeoff contamination check to be conducted from inside the airplane (OpSpec A041).

B. Training Program Review. The requirements of parts 121 and 135 will vary to some extent. The inspector should make a careful review of the requirements of the applicable part of 14 CFR before conducting the training program review. Section 121.629(c)(2) covers the initial and recurrent training requirements for operators who wish to receive approval under § 121.629(c). Section 135.345(b)(6)(iv) covers the training requirements for operators seeking approval under § 135.227(f). The operator must prepare a training/testing program to qualify required ground-deicing/anti-icing employees to perform their assigned duties.

1) The training must include both general procedures and the specific requirements of each make, model, series, and variant of aircraft.

2) The training program must include a means of testing and qualification for each category of employee who is covered under the approved program and who checks, inspects, deices, anti ices, releases, dispatches, or operates an aircraft.

3) The operator's training program must include flightcrew and dispatcher training.

C. Facilities and Equipment. The operator must acquire and deploy the equipment to accomplish ground-deicing/anti icing. Inspectors should plan to inspect some or all of the facilities at which this equipment is deployed (depending on the size of the operator) before granting initial approval. Some operators fulfill part of this requirement by demonstrating the knowledge of procedures and equipment during nonicing conditions prior to the deicing/ anti-icing season. Inspectors must also evaluate coordination procedures between the airport operator and the air traffic control (ATC) facility at the airport.

D. OpSpecs for Operators with Ground-deicing/Anti-icing Program Approval. When the POI and PMI are satisfied that the operator is able to begin ground-deicing/anti-icing operations, they should issue OpSpec A023. The OpSpecs should reference the sections of the operator's manual that contain the operations and airworthiness portions of the operator's program.

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3-2199 PHASE FOUR-VALIDATION TESTING. Phase four consists of a validation of the operator's procedures in actual operations. This process consists of a progressive refinement of the operator's manuals, checklists, and procedures as experience is gained and FAA surveillance reports become available.

A. Reason for Surveillance. Surveillance of the operators' ground-deicing/anti-icing programs or procedures is necessary to evaluate the effectiveness of these programs as well as to provide input on the adequacy of the rule requirements. Surveillance will further identify problem areas and will facilitate corrective action. The intended result of this surveillance program is to promote a safe winter operating season.

1) Surveillance Prerequisites. As a prerequisite to conducting surveillance, inspectors should review §§ 121.629, 125.221, and 135.227; AC 120-60, Ground-deicing and Anti-icing Program; AC 120-58, Pilot Guide Large Aircraft Ground Deicing; AC 20-117, Hazards Following Ground Deicing and Ground Operations in Conditions Conducive to Aircraft Icing; and must complete the appropriate computer-based instruction (CBI) course:

- Course 27019 – Ground Deicing/Anti-icing for Airworthiness Inspectors.
- Course 27020 – Ground-deicing/Anti-icing for Operations Inspectors.

2) Geographic Responsibility. Geographic inspectors should be familiar with the airport deicing/anti-icing plans and the ground-deicing/anti-icing programs and procedures of certificate holders that operate out of airports located in their geographic area. Local surveillance requirements should be coordinated with the certificate-holding district office (CHDO).

3) Conduct of Inspections. The only time that it may be possible to determine that the operator's ground-deicing/anti-icing procedures are safe and effective is during actual icing conditions. Therefore, inspection of operator ground-deicing/anti-icing procedures should be conducted during the times that winter operations and certificate holders' ground-deicing/ anti-icing procedures are in effect. Inspector surveillance is a sampling process. It is not intended to observe every deicing operation that occurs during the time that ground-deicing/anti-icing operations are ongoing. Through effective sampling, the CHDO should be able to determine the operator's ability to comply with the ground-deicing regulations and meet the requirements of their OpSpecs. The required number of ground-deicing surveillance activities necessary to determine a particular operator's effectiveness may vary from a relatively low percentage to a very high percentage. For certain operators, 100 percent surveillance may be necessary in order to determine the operator's capability to safely operate during ground-icing conditions.

a) Inspections can be conducted in conjunction with ramp or en route inspections, or during airport site visits. Each district office should develop and coordinate a ground-deicing/anti-icing surveillance plan as described in Volume 6, Chapter 2, Section 1. This plan should be coordinated with the regional deicing/anti-icing coordinator.

b) Surveillance of operators' recurrent ground-deicing/anti-icing testing or training programs should also be conducted.

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c) The POI should coordinate an inspection of the ground-deicing/anti-icing equipment used by the operator, with the geographic units that are responsible for each airport where the equipment is located. In some cases, one operator or contractor may deice more than one air carrier. In this case, it is necessary for the POI to ensure that the operator/contractor doing the deicing has a complete knowledge of the specific operator's approved ground-deicing/ anti-icing program. The POI can conduct this type of surveillance prior to the deicing/anti-icing season and should confirm that the company performing the deicing has knowledge and ability regarding ground-deicing/anti-icing equipment.

4) Program Tracking and Reporting Subsystem (PTRS). An operations inspector should record surveillance of ground-deicing/anti-icing operations by using PTRS Activity Code 1637 with the word "ICE" in the "National Use" block.

B. Conclusion of Phase Four. Phase four may be concluded when, in the judgment of the POI and PMI, surveillance of the operator's program shows that the operator is successfully conducting the program under actual ground-icing conditions. There is no minimum time period for phase four, but the PIs must have an adequate number of surveillance reports to form an educated opinion of the operator's performance. Normally, operators should be able to progress through phase four in one winter season or less.

C. Deficiencies. If final approval cannot be granted after an entire winter season due to deficiencies in the operator's program, the POI and PMI should consider having the operator return to phase two. PIs shall revise the OpSpecs of operators who are returned to phase two.

3-2200 PHASE FIVE-FINAL APPROVAL. When the PIs are satisfied with the operator's performance, they should inform the operator in writing that the verification process is complete.

RESERVED. Paragraphs 3-2200 through 3-2215.

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VOLUME 3 GENERAL TECHNICAL ADMINISTRATION

CHAPTER 27 GROUND DEICING/ANTI-ICING PROGRAMS

Section 4 Maintenance Inspector Responsibilities: Evaluate an Operator's Deicing/Anti-Icing Program

3-2236 PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) ACTIVITY CODES.

A. Maintenance: 3625.

B. Avionics: 5625.

3-2237 OBJECTIVE. This section provides guidance for the principal maintenance inspector (PMI) in assisting the principal operations inspector (POI) in evaluating for approval proposed deicing/anti-icing programs.

3-2238 GENERAL. The current regulations in Title 14 of the Code of Federal Regulations (14 CFR) parts 121, 125, and 135 are based on the "clean aircraft" concept. These regulations prohibit a takeoff with frost, ice, or snow (contamination) adhering to the wings, control surfaces, or propellers of an airplane. Title 14 CFR part 121, § 121.629, part 125, § 125.221, and part 135, § 135.227 require that each part 121/135 operator that conducts operations under conditions that may produce frost, snow, or ice accumulation must have one or both of the following:

- An approved aircraft deicing program.
- An inspection program that ensures that aircraft are free of any accumulation of frost/ice/snow before takeoff.

A. Approval Process. The approval of an operator's deicing/anti-icing program involves the following steps:

1) Reviewing the Operator's Program Submission. Both the PMI and the POI initially review the proposed program to ensure that all required elements have been submitted. After the PMI and the POI are satisfied that all of the required elements are suitably addressed, they will distribute copies of the program to all involved aviation safety inspectors (ASI).

2) Evaluating the Operator's Program Submission. Conduct a detailed analysis of the proposed program, training, equipment, and facilities.

3) Validation Testing. Validate the operator's performance during actual operations.

B. Issuance of Operations Specifications (OpSpecs). At the conclusion of the process, the POI with primary responsibility for this job task approves the OpSpecs. The OpSpecs authorize the operator to conduct operations under the program in ground icing conditions in which frost, ice, or snow may reasonably be expected to adhere to the operator's aircraft.

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C. Provisions and Exceptions. Section 121.629(d) includes an exception to the requirements for a complete deicing/anti-icing program. This section 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 before beginning the takeoff. An OTAC must be performed from outside the aircraft to ensure that the "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 contained in its OpSpecs.

D. Use of Infrared Deicing Facilities. An operator wishing to use an infrared deicing facility should ensure that the infrared deicing system used by that facility meets the criteria presented in this section or provides an alternative, acceptable means of assuring the operational safety of the deicing facility. Once an operator has determined that the infrared deicing system to be used by a deicing facility meets the criteria presented in this chapter, the operator should present their findings to their certificate-holding district office (CHDO) for review. Once the Federal Aviation Administration (FAA) determines, from the findings presented, that the infrared deicing system does meet all criteria, then the system may become part of the operator's ground deicing/anti-icing program. Operators should use the following criteria for approving the use of infrared deicing systems:

1) The operator should create an appropriate description of the system: hardware, energy source, markings, etc. In addition, the operator should ensure that:

a) The infrared deicing system performs its intended purpose (i.e., it effectively deices an aircraft).

b) The operation of infrared deicing systems does not create a hazard to:

- Aircraft;
- Ground personnel, as determined by appropriate Occupational Safety and Health Administration (OSHA) standards;
- Crewmembers;
- Passengers;
- Cargo (sensitive materials, plants, animals, etc.); or
- Airport facilities (navigational aids, antennas, communication facilities, buildings, etc.).

c) The infrared system submitted for approval is in agreement with appropriate industry standards as created by groups such as: the Society of Automotive Engineers (SAE), the International Organization for Standardization (ISO), and FAA documents.

2) The method for approving the operational use of an infrared system should follow established guidelines set by industry groups, such as SAE, ISO, Air Transport Association of America (A4A), International Civil Aviation Organization (ICAO), and the General Aviation Manufacturer's Association (GAMA). These guidelines should address:

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- The training of flightcrew, infrared equipment ground operator personnel, facility maintenance personnel, and deicing/anti-icing ground personnel;
- The temperature of the aircraft surface, including thermal cyclic loading, thermal stresses, and temperature extremes;
- Melted ice flowing into aerodynamically quiet areas and refreezing;
- Additional deicing and anti-icing requirements; and
- Environmental considerations.

E. Given the cost of deicing with conventional fluids and the recent demand for alternative deicing methods, interest in infrared deicing systems has increased. The FAA encourages the development and use of alternative methods of deicing such as infrared systems; however, it is necessary to ensure that infrared deicing systems are used with the highest degree of safety. Consequently, the FAA has developed general safety criteria for operators and inspectors to use in evaluating and approving the use of infrared deicing systems in an operator's deice/anti-ice program.

F. An operator wishing to use an infrared deicing facility should ensure that the infrared deicing system used by that facility meets the criteria, or provides an alternative, acceptable means of assuring the operational safety of the deicing facility.

3-2239 DEFINITIONS.

A. Pretakeoff Check. A pretakeoff check is a check of the aircraft's wings or representative aircraft surfaces for frost, ice, or snow during the aircraft's holdover time (HOT).

B. Pretakeoff Contamination Check. A pretakeoff contamination check is conducted by the flightcrew and ground personnel after exceeding the HOT. They conduct this check 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.

C. Outside-the-Aircraft Check (OTAC). 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, if 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 before beginning the takeoff.

D. Holdover Time (HOT). Holdover time is the estimated time for which 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 starts and ends when the applied deicing/anti-icing fluid loses its effectiveness.

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3-2240 PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites.

- Knowledge of the regulatory requirements of 14 CFR parts 121, 125, or 135, as applicable; and
- Successful completion of appropriate Airworthiness Indoctrination course(s).

B. Coordination. This task requires coordination with POIs and the operator.

3-2241 REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions):

- Advisory Circular (AC) 20-73, Aircraft Ice Protection.
- AC 20-117, Hazards Following Ground Deicing and Ground Operations in Conditions Conducive to Aircraft Icing.
- AC 23.1419-2, Certification of Part 23 Airplanes for Flight in Icing Conditions.
- AC 65-15, Airframe and Powerplant Mechanics Airframe Handbook (refer to Chapter 7).
- AC 91-6, Water, Slush, and Snow on the Runway.
- AC 91-13, Cold Weather Operation of Aircraft.
- AC 120-58, Pilot Guide for Large Aircraft Ground Deicing.
- AC 120-60, Ground Deicing and Anti-Icing Program.
- AC 120-89, Ground Deicing Using Infrared Energy.
- AC 135-9, FAR Part 135 Icing Limitations.
- AC 135-16, Ground Deicing and Anti-Icing Training and Checking.
- AC 135-17, Pilot Guide - Small Aircraft Ground Deicing.
- Aerospace Material Specifications (AMS) 1424, Deicing/Anti-Icing Fluid, Aircraft, SAE Type I.
- AMS 1428, Fluid, Aircraft Deicing/Anti-Icing Non-Newtonian, (Pseudo-Plastic), SAE Types II, III, and IV.
- Aerospace Recommended Practices (ARP) 4737, Aircraft Deicing/Anti-icing Methods.
- ARP 5149, Training Program Guidelines for Icing/Anti-Icing of Aircraft on Ground.
- FAA Order 8900.1 Volume 3, Chapter 27, Ground Deicing/Anti-Icing Programs.
- FAA Order 8900.1 Volume 4, Chapter 3, Section 5, Selected Practices.
- FAA-P-8740-24, General Aviation Accident Prevention Program, Tips on Winter Flying.
- 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.

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- ISO 11078, Aircraft— Deicing/Anti-Icing Fluids, ISO Type II, III, and IV.
- Publications of the Association of European Airlines (AEA) found on the Web site: http://www.aea.be/AEAWebsite/Presentation_Tier/Pr_Home.aspx.

NOTE: Numerous videos have been produced by manufacturers of deicing/anti-icing products and by aircraft operators. Access to these videos may be available through the regional deicing/anti-icing coordinator.

B. Forms. None.

C. Job Aids. Job Task Analysis (JTA): 2.3.34, 3.3.57.

3-2242 PROCEDURES.

A. Brief the Operator.

1) Assist the operator in acquiring all of the pertinent published information.

2) Ensure that the operator is familiar with the technical difficulties that may be involved and the regulatory requirements that must be met.

3) Outline for the operator those elements that must be contained in the operator's proposed program and the required actions at each stage of the approval process.

4) POIs and PMIs should inform the operators for which they have oversight responsibility of the process and criteria for approving infrared deicing systems. The operators should be informed that it is their responsibility to evaluate any infrared deicing system that they wish to use for their aircraft ground deicing/anti-icing program.

B. Review the Operator's Submittal.

1) If the submission is incomplete, immediately inform the operator and determine if the operator intends to complete the package.

2) If the submission is complete, inform the operator and distribute the documents to the appropriate inspectors for initial examination.

3) If the package is unacceptable, discuss with the operator those elements that were unacceptable and/or return the package with a letter outlining the deficiencies.

4) Once an operator has determined that an infrared deicing system meets the criteria, that operator should present its findings of the evaluation to its principal inspector.

C. Evaluate the Operator's Deicing/Anti-icing Program.

1) Ensure that the manual provides all categories of employees with instructions and information that helps them to perform their duties with a high degree of safety.

2) Ensure that the operator's manual material includes the following:

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a) Clear identification of each category of employee with responsibility for deicing/anti-icing program elements;

b) Duty definition of each category of employee involved;

c) Background information and step-by-step procedures; and

d) Checklists, where appropriate, that will allow each category of employee to perform their responsibilities to the required standard.

3) To ensure that the program complies with § 121.629(c), each operator's ground deicing/anti-icing program must cover a management plan detailing operational responsibilities and procedures as described in AC 120-60.

D. Review 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.

E. Examine Holdover Timetables And The Procedures For Their Use. Ensure that each operator has developed, and has 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.

F. Evaluate the Operator's Training. Ensure that the operator has developed a training program that qualifies each category of employee with responsibilities for deicing/anti-icing. Flightcrew training must be incorporated into the operator's approved training program. The training program must include the following:

1) General procedures and any specific requirements for each make, model, and variant of aircraft used by the operator;

2) Means of testing, qualification, and requalification for each category of employee involved in the program;

3) Demonstration of proficiency, by performance, of flight crewmembers, equipment operators, and inspectors; and

4) Procedures for recurrent training.

G. Determine if Exceptions Apply to the Operator.

1) Certificate Holders That Do Not Operate in Ground Icing Conditions. The part 135 ground deicing rule does not apply to a certificate holder that does not operate in ground icing conditions. This certificate holder is not required to train its pilots or develop pretakeoff contamination check procedures. Certificate holders that do not operate in ground icing conditions will have that limitation in their OpSpec A042.

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2) Operators Using Only One Pilot in 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 or the additional training required by the part 135 ground deicing rule. However, single-pilot operators must comply with all of 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 OpSpec. The pilots of these types of operators will need to demonstrate sufficient 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 its OpSpecs A041.

3) 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 the "clean aircraft" concept for helicopters.

H. Determine if Operator's Program Meets Training Requirements of part 135 Ground Deicing Rule. For operators required to have an approved training program, the training program must include pilot ground training in those subject areas 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:

1) 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.

2) Deicing/Anti-icing Procedures. Airplane deicing/anti-icing procedures include inspections and check procedures, and responsibilities and requirements for the pretakeoff contamination check or alternative procedures, as applicable.

3) 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.

4) 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.

5) 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.

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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.

6) Cold Weather Preflight Inspection Procedures. Training should include procedures for cold weather preflight inspections.

7) Contamination Recognition. This aspect of training should cover techniques for recognizing contamination on the aircraft. These techniques should be used during both the preflight inspection and the pretakeoff contamination check.

NOTE: Both parts 121 and 135 operators must have documentation in their general manuals (GM) or flight manuals for the procedures they intend to use to comply with their respective deicing/anti-icing rule.

3-2243 TASK OUTCOMES.

A. Complete the PTRS Record.

B. Complete the Task. Completion of this task will result in one of the following:

- For program approval, the issuance of OpSpecs.
- For program disapproval, listing of the resulting restriction in OpSpec A004.

C. Document the Task. File all of the supporting paperwork in the operator's office file.

3-2244 FUTURE ACTIVITIES. Normal surveillance.

RESERVED. Paragraphs 3-2245 through 3-2260.

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VOLUME 3 GENERAL TECHNICAL ADMINISTRATION

CHAPTER 31 OPERATOR RECORDKEEPING FOR 14 CFR PART 121 AND 135 CERTIFICATE HOLDERS

Section 2 Acceptance or Approval Process

3-3001 GENERAL. This section contains information and guidance to be used by principal inspectors (PI) when accepting or approving operator recordkeeping systems. The recordkeeping acceptance or approval process follows the general five-step acceptance and approval process described in Volume 3, Chapter 1, Section 1, the general process for approval or acceptance. The computer-based recordkeeping system is authorized in operations specification (OpSpec) A025.

3-3002 REGULATORY REQUIREMENTS. Title 14 of the Code of Federal Regulations (14 CFR) part 121, § 121.683 requires that the Federal Aviation Administration (FAA) approve a part 121 operator's computer-based recordkeeping system. All other recordkeeping systems must be acceptable to the administrator (part 121 subpart V, Records and Reports). PIs shall determine that an operator's recordkeeping system is in compliance with applicable regulations.

3-3003 GUIDELINES FOR APPROVAL OR ACCEPTANCE. During initial certification, the operator should ensure that the initial compliance statement clearly describes the procedures to be used by the operator for the generation and maintenance of required records. The computer-based recordkeeping system is authorized in OpSpec A025. After certification, PIs shall conduct surveillance of an operator's records on a routine basis to ensure that the records are being maintained. PIs shall also ensure that the records continue to contain the required information to show compliance with 14 CFR. The operator shall develop a section in its General Operations Manual (GOM) that provides detailed instruction on the use of the recordkeeping system. This GOM section must be provided to the PI as part of the GOM.

3-3004 LEGAL REQUIREMENTS OF ELECTRONIC SIGNING. The FAA requires that an electronic signing process meet the following criteria to be considered legally binding:

A. The signature must be unique to the person using it. Electronic signatures that incorporate digital signature technology meet this requirement by virtue of public/private key cryptography. The private key generated for the user and used for signing data is virtually unique.

B. The signature must be verifiable as belonging to the user. Digital signatures meet this requirement by referencing a person's digital certificate to authenticate the signatory's identity.

C. The signature must be under the sole control of the person using it. A digital signature is controlled by the very process used to access the private key that signs the data electronically. As the key is stored in a protected file encrypted with a personal password, the signatory is required to enter his/her password each and every time a signature is to be applied. As a result, the digital signature remains under the sole control of the person with the file containing the key and the password that unlocks it. This process is the electronic equivalent of applying a handwritten signature to a paper document.

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D. The signature must be permanently attached to the data in a way that authenticates both the attachment of the signature to that data and the integrity of the data transmitted. Digital signatures achieve this by permanently embedding signatures into the document and invalidating them if any changes to the document's contents are detected. Using a hashing algorithm, the digital signature authenticates and permanently links the act of consent embodied by the signature to the exact contents of the signed document. Each time the document is opened, you can authenticate the signature and verify and detect whether data has been changed since the document was first signed. If a change is detected, the previously applied digital signature in invalidated. The electronic version of a document with digital or electronic signature attached is used for the authentication. Therefore, the document file must be retained or archived for authentication purposes.

E. The signer must intend the signature to have the same force and effect as a signature affixed by hand. Electronic signatures may also meet this standard if the following three items are covered. First, a person must use a unique user identification and private password within the applicable closed system each time he/she plans to electronically sign a document within that system. Second, they place a mark or a signature in the document that visually indicates the signer's intent. Last, they include the option of incorporating an affirmation message along with the mark or signature. All steps ensure that intent is clearly understood.

F. Electronic records submitted or maintained in accordance with procedures developed under this guidance, digital or electronic signatures or other forms of electronic authentication used in accordance with such procedures, shall not be denied legal effect, validity, or enforceability because such records are in electronic form.

3-3005 DIGITAL SIGNATURES, CERTIFICATES, PUBLIC KEY INFRASTRUCTURE (PKI), AND CERTIFICATE AUTHORITIES.

A. Digital Signatures. Digital signature technology is the foundation of a variety of security, e-business, and e-commerce products. Based on public/private key cryptography, digital signature technology is used in secure messaging, PKI, virtual private networks (VPN), Web standards for secure transactions, and electronic signatures.

1) Public/private key cryptography encrypts and decrypts data through the unique pairing of public and private keys. Private keys are kept secret and stored in a protected environment, such as on a smart card or in a password-protected file on a personal computer (PC), whereas public keys are housed in publicly accessible directories for use in decrypting messages. Digital signatures verify the origin of digitally signed data using a public key to confirm that the data was encrypted with a private key. When combined with a hashing algorithm, digital signatures can also verify the integrity of data.

2) Contrary to what its name may suggest, however, digital signature technology does not enable individuals to sign electronic data with the same effect as a handwritten signature. For this to occur, digital signature technology must be incorporated into a process that reproduces the basic elements of a handwritten signature. Such elements include that the signature be unique, verifiable, and under the sole control of the signatory. The process must also

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be able to authenticate signed data and effectively capture a signer's intention to authenticate, agree to, or be bound by the data that was signed.

B. Problems With Digital Signatures. While the public and private key pairs used in a digital signature are unique and can authenticate data for a very simple process, signing applications are not simple processes. Without a process or an application, digital signatures on their own cannot electronically reproduce the key elements required of a binding handwritten signature.

C. Digital Certificates, PKI, and Certificate Authorities (CA). When digital signature technology is used to authenticate a particular individual, that individual's public key is digitally signed with another private key to secure his/her identity. This process produces what is know as a digital certificate, which can be issued and managed in one of two ways: it can be self-issued or issued through a PKI.

1) A self-issued certificate (not acceptable to the FAA), also known as a self-signed certificate, is produced when an individual signs his/her own certificate. The equivalent of a handwritten signature on paper, a self-signed certificate means the bearer alone can vouch for the authenticity of his/her identity. In these cases, verification of that identity occurs directly between the individual in question and the other parties involved in the transaction. Once approved, subsequent use of the individual's digital certificate can be trusted.

2) While self-issued certificates are the easiest to implement and manage, digital certificates using PKI (acceptable to the FAA) can also be issued and managed using a PKI consisting of servers, databases, cryptographic applications, and policies. The PKI ensures that digital certificates are used under the sole control of an issuing organization, and can be revoked or suspended at a later date if an individual's status changes. Digital certificates using PKI can be issued and managed by a central person or department within an organization, or by a trusted third party (which is acceptable to the FAA) known as a certificate authority (CA) who assumes the liability of vouching for an individual's identity.

RESERVED. Paragraphs 3-3006 through 3-3030.

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VOLUME 3 GENERAL TECHNICAL ADMINISTRATION

CHAPTER 31 OPERATOR RECORDKEEPING FOR 14 CFR PART 121 AND 135 CERTIFICATE HOLDERS

Section 4 Computer-Based Recordkeeping

3-3051 GENERAL. Many operators are developing computer-based recordkeeping systems, allowing more flexible and efficient maintenance of records. Some computer-based systems offer electronic communications capabilities which benefit both the operator and the Federal Aviation Administration (FAA). This section contains information and guidance to be used by principal inspectors (PI) when evaluating and approving an operator's computer-based recordkeeping system.

3-3052 REGULATORY REQUIREMENTS. Title 14 of the Code of Federal Regulations (14 CFR) parts 121 and 135 require that operators maintain certain records on crewmembers and aircraft dispatchers. Part 121, § 121.683(c) requires that computer-based recordkeeping systems be approved by the FAA. Part 135, § 135.63 neither specifies the method by which part 135 operator records are kept nor requires approval of computer-based record systems for part 135 operators.

3-3053 GUIDELINES FOR SYSTEM APPROVAL. PIs shall ensure that operators follow certain guidelines and submit certain information when applying for approval of a computer-based recordkeeping system.

A. Approval and Evaluation Process. A part 121 operator may apply for approval of a computer-based recordkeeping system that is designed to satisfy either all regulatory requirements or specific regulatory requirements, such as training records. When evaluating a computer-based recordkeeping system, PIs shall ensure that the proposed system provides a means of maintaining accurate, timely, and reliable records required by 14 CFR. When approving the system, PIs shall follow the general five-step approval process described in Volume 3, Chapter 1, Section 1. Operations specification (OpSpec) A025 is used for the final authorization for an operator's computer-based recordkeeping system.

1) Part 121 operators must apply for approval of computer-based recordkeeping systems by letter.

a) The letter of application must contain the following information:

- A general description of the proposed computer-based recordkeeping system (including the facilities, hardware, and software to be utilized);
- The data backup system to be used;
- Access and security procedures for both the operator and FAA personnel;
- Basic procedures for data entry personnel;
- A general description of any special procedures and capabilities; and
- Digital or electronic signature type(s) and processes to be used.

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b) The letter of application must include one or more of the following categories of records which will be maintained by the computer-based recordkeeping system:

- Airman training records (including pilot, flight engineer, flight navigator, flight attendant, flight instructor, check airman, and aircraft dispatcher training records);
- Aircraft qualification records (including aircraft type ratings, proficiency checks, competency checks, and line checks);
- Flight time limitation and rest requirement records;
- Medical qualification records (when applicable);
- Route, "special airport," and area qualification records;
- Operating Experience (OE) and/or operating familiarization records;
- Pilot recency of experience records;
- Check airman, aircrew program designee (APD), and school designated examiner (SDE) designations or authorizations;
- Special training or testing requirements;
- Aircraft listings;
- Load manifests, dispatch/flight releases;
- Communication records; and
- Manual system and revisions.

2) The PI shall ensure that any operator that requests approval of a computer-based recordkeeping system retains data entry forms or other pertinent nonelectronic records in a parallel record system. The PI shall ensure that all required records continue to be maintained while the computer-based recordkeeping system is being installed, tested, and evaluated, and data entry personnel are being trained to recognize regulatory terminology and requirements.

B. System Evaluation. PIs shall evaluate the computer-based recordkeeping system capabilities and level of security.

1) Prior to approval, the PI should carefully evaluate the proposed computer-based recordkeeping system to ensure that the system is capable of providing accurate, timely, and reliable records, as required by 14 CFR. The PI shall review the operator's proposed transition plan and user manual, and observe operation of the operator's existing recordkeeping system in parallel operation with the proposed computer-based system. The extent of this evaluation depends on the complexity of the proposed system and its intended use. The evaluation of a system designed to comply with all regulatory requirements will be much more complex than that of a system designed to maintain records in one specific category. The PI shall ensure that system security, record retention periods, and data backups are adequate. Potential problem areas should be identified and corrected prior to approval.

2) PIs shall evaluate the proposed system's level of security to ensure that the database is adequately protected.

a) To maintain integrity of the database and associated records, the PI should coordinate with the operator during the approval process concerning which FAA personnel will

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have access to the operator's recordkeeping system. One frequently used approach is to rely on controlled user access codes and passwords.

b) A representative designated by the operator should actively monitor user access and periodically review access control requirements. This representative shall be specifically identified and authorized in the operator's proposal and user manual.

c) A signature may be in the form of a digital signature, a digitized image of a paper signature, a typed notation, an electronic code, or any other unique form of individual identification that can be used as a means of authenticating a record, record entry, or document. The use of digital electronic signatures enhances the ability to identify a signatory and helps to eliminate the traceability difficulties associated with illegible handwritten entries and the deterioration of paper documentation. The purpose of a digital electronic signature is identical to that of a handwritten signature or any other form of signature currently accepted by the FAA. The handwritten signature is universally accepted because it has certain qualities and attributes that should be preserved in any digital or electronic signature. Therefore, to be considered acceptable, a digital or electronic signature should possess those qualities and attributes intrinsic to a handwritten signature that guarantee its authenticity.

1. Users of digital electronic signatures should be aware that not all identifying information found in an electronic system may constitute a signature. Other guarantees commensurate with those of a handwritten signature should be provided. The operator will need to provide verification of an agreement by which it will implement the use of digital electronic signatures, information interchanges, or alternative methods of information storage. This written agreement means some manner of a recording to memorialize the two parties' agreement. Within the context of this guidance, a written agreement may be part of some other form of document and it may be a separate instrument.

2. The operator should establish a procedure for allowing designated personnel such as flight instructors/check airmen, aircraft dispatcher supervisors, and flight attendant supervisors to electronically certify all record entries for which they are responsible. This certification may take one of many forms, such as full name, initials, or unique identification number. Each designated person with authorization to make such entries shall be issued a unique individual access code and password in order to validate the entry. The operator may devise a system that requires the validating official to either enter a real-time record into the system or complete a written transmittal document to be given to data entry personnel. If a written transmittal document is used, the identification of the validating official must become part of the record.

3. A computer entry used as a signature should have restricted access that is limited by an authentication code that is changed periodically. The operator should include this in the description of its signature process(es) as approved in OpSpec A025.

4. Any electronic records submitted or maintained in accordance with procedures developed, or digital and/or electronic signatures, or other forms of electronic authentication used in accordance with such procedures, shall not be denied legal effect, validity, or enforceability because such records are in electronic form.

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d) Appropriate FAA personnel assigned to the operator should be provided with an access level which allows unrestricted data retrieval of all records required by 14 CFR. If the operator elects to use the computer recordkeeping system's capability for electronic designation of APDs and check airmen, an appropriate level of access should be provided to the PI or a designated representative to allow necessary data entries. Any document/information in an electronic format must remain accessible to all persons who are entitled to access by statute, regulation, or rule of law, for the period required by such statute, regulation, or rule of law, in a form that is capable of being accurately reproduced for later reference, whether by transmission, printing, or otherwise.

3) The PI shall verify that the operator has established a backup capability to generate a complete set of duplicate records, either electronic or nonelectronic. These records should be stored in a location separate from the main information storage facility. These records may be stored in any form acceptable to the PI, including magnetic tape, magnetic or optical disk, microfiche, or printed records. It should be emphasized that with electronic approval/acceptance of a manual system or revision, no ink signature document is available. For authentication purposes, the approved/accepted material, with the electronic signature attached, must be kept on file for the life of the documents. This will require the carrier and FAA to adopt a reliable multilayered backup system for the electronic documents. The operator shall back up data as frequently as appropriate to the operator's level of operations and system complexity. For example, a major operator may perform a simultaneous online data backup, while a smaller operator may perform backups at less frequent intervals.

4) The operator shall develop a working procedures manual for day-to-day guidance and training for the operator's employees. This manual should also be provided as a reference document for FAA users. This manual will not require FAA approval but must include guidance in the automated recordkeeping system structure and instructions for using computer commands for such operations as data entry, data processing, data retrieval, and report generation. This manual should address system security procedures and responsibilities, including identification of personnel charged with various levels of data entry, data verification and correction, data audits, and quality control. It should also identify individuals with the authority to issue user access codes and passwords.

5) The PI shall ensure that operators' programs contain audit procedures that are adequate to assure the accuracy of the database. The frequency and scope of these procedures should reflect the complexity of the computer-based recordkeeping system and the size of the database.

6) Other types of signatures may also be acceptable to the Administrator. An example of an acceptable form of a signature other than a written name is a mechanic's stamp. If a form of identification other than a handwritten signature is used, access to that identification should be limited to the named individual only. Access to stamps or authentication codes should be limited to the user only. Although a signature may take many forms, the FAA emphasizes that all electronic entries may not necessarily satisfy the criteria that would qualify an electronic entry as an acceptable signature.

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3-3054 GRANTING APPROVAL. When all requirements of subparagraphs 3-3053B1) through B5) have been met, the PI may either grant approval for the entire computer-based recordkeeping system or any part of the system. This approval shall be in OpSpec A025, and shall directly reference the manual where the information in the recordkeeping system is maintained.

3-3055 SYSTEM SURVEILLANCE. PIs are responsible for conducting system surveillance which includes periodic inspections and audits, inspection intervals, and data entry accuracy.

A. Inspections and Audits. After the computer-based recordkeeping system is approved and fully operational, the PI shall ensure compliance through periodic inspections and audits. These inspections and audits shall be conducted using the same criteria as those used during the initial approval process. The PI should plan inspection intervals at least once every 12 months. The annual inspection should normally be conducted in conjunction with National Program Guidelines (NPG).

B. Inspection Intervals. When determining inspection intervals, the PI shall consider the following:

- The size of the database;
- The system's overall sophistication level;
- The extent of the system's security measures; and
- The capability and frequency of the systems self-audit function.

C. Scope of the Inspection. The PI shall determine the scope of the inspection. It may be appropriate to sample a small number of records in each category that the system is approved to maintain, or to conduct an indepth inspection of a specific category of records, such as aircraft dispatcher training.

D. Data Entry Accuracy. The PI shall ensure data entry accuracy during all inspections and audits. A useful evaluation tool might be to compare the operator's required records with FAA surveillance, inspection, and certification records.

3-3056 ADDITIONAL SYSTEM CAPABILITIES. In addition to record retention and retrieval, the operator may request approval of a system with additional capabilities such as electronic communications and surveillance.

A. Electronic Communications. The operator may provide the PI with electronic mail capability which would allow the operator to request designation of certain airmen, such as check airmen, APDs, and SDEs. This capability would also allow the PI to respond electronically to these requests, thereby increasing both operator and FAA efficiency and convenience. To implement this electronic mail capability, the operator should provide the PI with system access from the PI's facility by providing necessary hardware to be installed at the PI's facility.

B. Electronic Surveillance. The operator may also provide direct access to the operator's computer-based recordkeeping system to allow the PI to carry out required

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surveillance activities such as random record retrieval for spot inspections, data audits, selective data retrievals, and reports or summaries. The operator should limit system access to those portions of the recordkeeping system that are used for data retrieval of records required by 14 CFR. Normally, the PI should not be given access to data entry areas; however, the operator may authorize the PI access to data entry areas which pertain to FAA-specific data, such as observations of the pilot in command (PIC), OE, and observation events related to the designation of check airmen or APD candidates.

3-3057 ACCESS TO WEB-BASED OPERATIONS SAFETY SYSTEM (WebOPSS).

A. The FAA provides the aviation industry access to the WebOPSS. Any operator may be given this access through the internet and through the use of an electronic signature. Current information on this may be found in the OpSpec A025 job aid in association with OpSpec A025 in the WebOPSS Guidance Subsystem.

B. A digital and/or electronic signature, such as that used in the WebOPSS to sign each OpSpecs paragraph, uses electronic approval software and digital certificates using the public key infrastructure (PKI) by a certificate authority (CA). It combines the cryptographic functions of a digital signature and uses a hashing algorithm for authenticating the data, and it provides secure user authentication by permanently referencing a digital certificate within the signature file. These features, among others, make the digital electronic signatures used in WebOPSS legally binding and difficult to repudiate.

RESERVED. Paragraphs 3-3058 through 3-3075.

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VOLUME 3 GENERAL TECHNICAL ADMINISTRATION

CHAPTER 37 EVALUATE A PART 121/135.411(A)(2) CERTIFICATE HOLDER'S SHORT-TERM ESCALATION PROCEDURES

Section 1 Evaluating Short-Term Escalation Procedures

3-3706 PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) ACTIVITY CODES.

A. Maintenance: 3320.

B. Avionics: 5320.

3-3707 OBJECTIVE. This chapter provides guidance for evaluating Title 14 of the Code of Federal Regulations (14 CFR) part 121 and part 135, § 135.411(a)(2) certificate holder's short-term escalation procedures based on requirements for operations specification (OpSpec) D076, Short-term Escalation Authorization.

3-3708 GENERAL. A certificate holder's time limitations, maintenance intervals, and instructions and procedures to conduct inspections, which include the necessary tests and checks, are an integral part of their maintenance and inspection program. This program is a fundamental component of the certificate holder's Continuous Airworthiness Maintenance Program (CAMP). On average, the inspection intervals in the certificate holder's manual include a degree of safety to maximize aircraft reliability. Due to unanticipated circumstances, a certificate holder might need to temporarily adjust the interval for an individual aircraft, system, or component.

A. Use of a Short-Term Escalation Authorization.

1) By authorizing the use of the certificate holder's short-term escalation procedures, the Federal Aviation Administration (FAA) is allowing the certificate holder to apply the limitations of OpSpec D076 to aircraft maintenance intervals, airframe component and appliance maintenance intervals, and powerplant component and accessory maintenance intervals. The limitations imposed by OpSpec D076 and the certificate holder's procedures should not allow a short-term escalation that would compromise the airworthiness of an aircraft or any safety of flight issue. Unanticipated situations arise, such as contractor scheduling, conflicts in weather, parts availability, or other unscheduled maintenance; during which the short-term escalation of a maintenance interval may be used.

2) Principal inspectors (PI) must closely monitor the use of short-term escalation authorizations to ensure certificate holders are not abusing or using the escalation authorizations indiscriminately and that they do not conceal unsound maintenance practices, maintenance program deficiencies, or poor management decisions.

3) Short-term escalations for aircraft, aircraft systems, or components not subject to a reliability program may only be authorized by the issuance of OpSpec D076 or by a FAA certificate-holding district office (CHDO)/certificate management office (CMO) authorization on a case-by-case basis.

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4) Certificate holders operating aircraft, aircraft systems, or components under the controls of an approved reliability program may issue short-term escalations, provided that short-term escalation procedures have been incorporated into their reliability program.

5) The certificate holder must provide policy, procedures, instructions, and/or information in the manual, which allows personnel concerned with short-term escalations to perform their duties and responsibilities to a high degree of safety.

6) A short-term escalation should only be used after the certificate holder thoroughly evaluates all of the alternatives and gives careful consideration to the operating performance and the continued airworthiness of the aircraft, systems, and components. A review of the proposed escalation should include the following:

a) If the short-term escalation authorization applies to powerplants; powerplant accessories and components; propellers and gearboxes; and airframe accessories and components, the certificate holder must provide previous inspection results or justifiable data from previous teardown reports.

b) If supplemental inspections are warranted during the escalation period to ensure continued airworthiness of the airframe, system, or component, the certificate holder must provide the CHDO/CMO with a supplemental inspection schedule.

7) Short-term escalations cannot be issued after an item has exceeded an established maintenance program time limitation. PIs should monitor each short-term escalation to ensure that the certificate holder is not using the short-term escalation to hide non-compliance with the certificate holder's time limitations. PIs should look at the current time limitation, the current time, and the proposed escalation to properly monitor for these situations.

NOTE: The short-term escalation must not be construed as a permanent escalation to the task or check interval.

8) Maximum short-term escalation intervals may be a percentage of an existing time interval for a particular task, or designated in hours of time in service, cycles, or some other identifiable increment. Except under certain conditions, the maximum time allowable for a short-term escalation is 10 percent (not to exceed 500 hours/cycles) time in service. Maintenance tasks or checks controlled by calendar days or years would also have a limit of 10 percent, not to exceed the amount of days it would take the aircraft to reach the 500-hour time in service limit. For example, if a certificate holder's use is 10 hours a day, the maximum time allowable for short-term escalation of a particular calendar task is 10 percent, but may not exceed 50 days (500 hours ÷ 10 hours a day = 50 days). Certificate holders must describe the methods and procedures for calculating short-term escalation intervals in their manual.

9) The certificate holder must notify the CHDO/CMO no later than the next working day following the certificate holder's issuance of the short-term escalation. To ensure continuity between the FAA and the certificate holder, the FAA recommends that the certificate holder's program includes procedures to notify the CHDO/CMO by telephone within 24 hours after the authorization is issued, followed by written notification no later than 72 hours after issuance of the authorization.

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B. Extension of Short-Term Escalations. The 10 percent, which is not to exceed the 500-hour maximum time limit for a short-term escalation, is usually sufficient for a certificate holder to accomplish required tasks. Under special conditions, a certificate holder may extend the maximum limit of an individual item. The certificate holder must perform sufficient analysis and provide adequate justification to the CHDO to substantiate the extension request. All extension requests beyond the maximum limit require prior approval by the PI.

C. Prohibitions. Short-term escalation procedures do not apply to the following:

- Intervals specified by FAA Airworthiness Directives (AD);
- Life limits specified by Type Certificate Data Sheets (TCDS);
- Limitations specified by minimum equipment lists (MEL) or Configuration Deviation Lists (CDL);
- Structural sampling periods imposed by Maintenance Review Boards (MRB);
- Certification Maintenance Requirements (CMR) (unless specifically allowed and designated by the CMR document); and
- Fuel system airworthiness limitations (AL) and critical design configuration control limitations (CDCCL).

D. Buying Back of Time.

1) Do not assume that all short-term escalation time granted must be "bought back" at the next inspection. Each carrier must evaluate its program during development and revisions to determine if and when a "buying back" of time may be required.

2) Carriers routinely combine individual maintenance tasks with common intervals into letter checks. These letter checks normally run in a series (e.g., C1, C2, C3, etc.). The use of a short-term escalation authorization to extend a letter check that is part of a series of letter checks will also impact the compliance times of individual maintenance tasks that compile the checks.

EXAMPLE: A particular maintenance task is due every 4,000 hours and is added to the C check series. The C1 is due at 1,000 hours, the C2 at 2,000 hours, and so forth. In this scenario, the particular task was placed on the C4 for completion. The certificate holder exercises its short-term escalation process on the C2 check by escalating it 100 hours. After this escalation, the normal repeat interval of 1,000 hours is continued through the rest of the C check series. Now the certificate holder does an individual maintenance task compliance audit and discovers that this particular task, which was required by their maintenance program to be completed at 4,000 hours, was actually completed at 4,100 hours (because of the short-term escalation exercised by the carrier for the C2). Even though this particular task was not part of the C2 package, it is acceptable for the task to have exceeded the maintenance program requirement in the amount equal to the short-term escalation authorized (maximum of 10 percent).

3) While constructing their check packages, carriers should take particular care to avoid the possibility of including maintenance tasks that are prohibited from being short-term

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escalated (refer to subparagraph 3-3708C above). If a carrier wishes to include those prohibited tasks, then the PI and the carrier must evaluate the effects of the short-term escalation and determine if buying back of time granted during the short-term escalation is required.

4) If the above scenario used a particular 4,000-hour task that was unacceptable for short-term escalation, then the carrier would be in violation unless the time was bought back after the C2 short-term escalation to avoid exceeding the 4,000-hour requirement of the task.

NOTE: For the purposes of this chapter, short-term escalation applies to both inspections and any other maintenance requirements (operational check, functional check, restoration, and discard) of the aircraft, aircraft appliances, and components. Subparagraph 3-3708C lists the only items not allowed to be subject to short-term escalation.

E. U.S. Military Contracts.

1) Certificate holders may not use short-term escalation procedures to conduct operations under a U.S. military contract. Such operations using short-term escalation procedures must be authorized under the provisions of 14 CFR part 119, § 119.55.

2) The FAA has always intended short-term escalation for use only when events outside the control of the air carrier prevent the air carrier from performing scheduled maintenance. Consistent with the regulatory requirement to maintain operational control, flight scheduling is always under the control of the air carrier. Therefore, air carriers may not use short-term escalations to satisfy flight scheduling requirements. Furthermore, when an air carrier conducts flight operations under a U.S. military contract, there is no longer an unanticipated situation. The use of short-term escalations to conduct flight operations under a U.S. military contract is contrary to the policy in this order and OpSpec D076.

3) OpSpec D076 does not permit short-term escalations for events that are within the air carrier's control such as flight scheduling; therefore, air carriers may use § 119.55 to request a deviation from any of the requirements of part 119, 121, or 135. In these cases, after all the conditions in § 119.55(c) have been satisfied, the FAA will issue a non-standard OpSpecs under § 119.55(d) authorizing a deviation from any scheduled maintenance time limit.

3-3709 COORDINATION REQUIREMENTS. This task requires coordination between the airworthiness PI and the certificate holder.

3-3710 REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions). Air Transportation Oversight System (ATOS) Element Performance Inspection (EPI): 1.3.23, (AW) Short-Term Escalations.

B. Forms. None.

C. Job Aids:

- Automated OpSpecs checklists and worksheets.

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- Job Task Analysis (JTA): 3.3.44.

3-3711 PROCEDURES. Review the air carrier certificate holder's manual and ensure that:

A. Duties, Responsibilities, and Authority. The general policies section of the applicable manual contains the duties, responsibilities, and authority for part 119, § 119.65 personnel (refer to § 119.65(e)), and for any other management personnel and appropriate members of the ground organization (i.e., quality assurance (QA), quality control (QC), maintenance planning, and recordkeeping; refer to part 121, § 121.135(b)(2)).

B. Duties, Responsibilities, and Instructions. The manual contains duties, responsibilities, and instructions to keep each of its employees and other persons used in its operations informed of the provisions of its OpSpec D076 that applies to that employee's or person's duties and responsibilities (refer to § 119.43(c)).

C. Policies, Procedures, and Instructions. There are clear policies, procedures, instructions, and/or information to allow personnel concerned with the OpSpec D076-authorized short-term escalation process to perform duties and responsibilities to a high degree of safety (refer to §§ 121.135(a)(1) and 121.135(b)(1), OpSpec D072, and OpSpec D076).

D. OpSpec D076. The certificate holder has inserted pertinent excerpts of its OpSpec D076 (or additional references) in its manual (refer to § 119.43(b)), identified each such excerpt as a part of its OpSpecs (refer to § 119.43(b)(1)), and has stated that compliance with each OpSpec D076 requirement is mandatory (refer to § 119.43(b)(2)).

E. Maximum Limitations. It defines the maximum limitations for a short-term escalation.

F. Short-Term Escalation. It contains criteria defining the type of data acceptable for justifying a short-term escalation and procedures to ensure that that no short-term escalations are authorized without supporting data.

G. Correspondence Maintenance Program. It corresponds with the overall maintenance program. The procedures must ensure that an escalation will not create an unsafe condition.

H. Restrictions Repetitive Escalations. It restricts the occurrence of repetitive short-term escalations that indicate a need for a change in the maintenance program.

I. Method for Recording Escalations. It provides a method for recording all escalations, with provisions for submitting/reporting each request/use of an escalation to the CHDO.

J. Interaction with the Continuing Analysis Surveillance System (CASS). There must be policies and procedures to ensure the short-term escalation program interacts with the CASS. The CASS must provide performance measurements to ensure the program is producing desired results.

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K. Procedures and Controls. There are procedures and controls in place to prevent the use of short-term escalation on aircraft that are operating under the provisions of a U.S. military contract.

NOTE: The operator may include a list of items that it restricts from short-term escalation.

3-3712 TASK OUTCOMES.

A. Complete the PTRS Record.

B. File ATOS Safety Attribute Inspection (SAI): 1.3.23.

C. Complete the Task. Successful completion of this task will result in one of the following:

- A letter to the certificate holder indicating denial of the short-term escalation authorization; or
- An amendment to the certificate holder's OpSpecs, if applicable, authorizing short-term escalation authorization.

D. Document the Task. File all supporting paperwork in the certificate holder's office file.

3-3713 FUTURE ACTIVITIES. Monitor the operation closely as follows:

- Ensure authorization is not being abused,
- Ensure manual procedures are being followed,
- Monitor the aircraft's records for inspection compliance, and
- Review the projected inspection schedule and ensure that the short-term escalation authorization requirements have been applied.

RESERVED. Paragraphs 3-3714 through 3-3730.

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VOLUME 3 GENERAL TECHNICAL ADMINISTRATION

CHAPTER 43 EVALUATE A CONTINUOUS AIRWORTHINESS MAINTENANCE PROGRAM

Section 2 Evaluating the Required Inspection Element of a Continuous Airworthiness Maintenance Program

3-3882 PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) ACTIVITY CODES.

A. Maintenance: 3330, 3341.

B. Avionics: 5330, 5341.

3-3883 OBJECTIVE. This section, along with Volume 3, Chapter 43, Section 1, provides information and policy for evaluating the required inspection element of the certificate holder's Continuous Airworthiness Maintenance Program (CAMP). The aviation safety inspector (ASI) performing the evaluation should use Safety Attribute Inspection (SAI), Data Collection Tool (DCT) 1.3.4, Required Inspection Items (RII), with this section.

3-3884 GENERAL INFORMATION. The required inspection is one of the 10 elements of the CAMP (see Volume 3, Chapter 43, Section 1). The certificate holder uses the inspection to verify the proper performance of certain items of maintenance on its aircraft. The items of maintenance include at least those that if performed improperly or improper parts or materials are used, could result in failure, malfunction or defect that would endanger the safe operation of the aircraft. For the purposes of this section, proper maintenance means maintenance and alterations performed in accordance with the certificate holder's manual as required by Title 14 of the Code of Federal Regulations (14 CFR) part 121, § 121.369(b). With few exceptions, 14 CFR parts 121, 135 and 91 subpart K (part 91K) all contain the same basic required inspection provisions and requirements. The differences pertain to their overall applicability and the regulatory language used. For example, under part 121, required inspections apply to all certificate holders. However, under parts 135 and 91K, they only apply to certain certificate holders and operators that have a CAMP as noted in part 135, § 135.411(a)(2), (b), and (d) and part 91, § 91.1411. Additionally, parts 121 and 135 refer to a certificate holder whereas part 91K refers to a program manager. Only § 135.429(d) contains an additional provision for a pilot to perform required inspections on rotorcraft under certain conditions.

3-3885 REQUIRED INSPECTION ORGANIZATION.

A. Organization and Separation of Maintenance and Inspection Functions.

1) Sections 121.365 and 135.423 contain the organizational requirements for the certificate holder and each person used by a certificate holder to perform maintenance, preventative maintenance, alterations, and required inspections. The organization must be adequate to perform the work. "Work," as referenced in the regulation, means maintenance.

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2) Paragraph (b) of the regulation requires the certificate holder and each person with whom it arranges for the performance of required inspections to have an organization adequate to perform the work. The inspection organization is responsible for determining that workmanship and materials used conform to the regulations and the certificate holder's manual. "Work," as referenced in paragraph (b), means required inspection work.

3) Paragraph (c) adds an additional organizational requirement for organizing the performance of the maintenance function and the required inspection function so as to separate the inspection functions from the other maintenance, preventative maintenance, and alteration functions. The separation must be below the level of administrative control at which persons exercise overall responsibility for the required inspection function and other maintenance, preventive maintenance, and alteration functions. (See Volume 3, Chapter 43, Section 1, Figure 3-131A.)

4) In making the determination of an adequate organization, it is important to note that the regulations do not specify the number of required inspection personnel the certificate holder or other persons must, or can, have. Additionally, paragraphs (c) of §§ 121.365 and 135.423 recognize that the certificate holder or other persons can use personnel for both maintenance and required inspections. In determining organizational adequacy, the certificate holder and ASI should consider the regulatory phrase "adequate to perform the work." The certificate holder and ASI should also consider the certificate holder's legal requirement to perform its services with the highest possible degree of safety.

NOTE: The certificate holder should also consider the additional and related requirements of §§ 121.369(a), 121.369(b)(7) and (8), 121.371(b), 135.427(a), 135.427(b)(7) and (8), and 135.429(b) when making its determination of organizational adequacy.

B. Under the Supervision and Control of the Inspection Unit.

1) Sections 121.371(b) and 135.429(b) require that no person may allow any person to perform a required inspection unless, at that time, the person performing that inspection is under the supervision and control of the inspection unit. The certificate holder and ASI should note that the regulation directs compliance at the person with authority and responsibility for allowing (assigning or directing) another person to perform the required inspection. This person might be a manager, supervisor, or maintenance controller that assigns work. This person is responsible for ensuring that the person he or she assigns or allows to perform the required inspection is under the supervision and control of the inspection unit at the time he or she performs the required inspection. This requirement is normally not a problem for certificate holders or the other persons that have full-time or dedicated required inspection personnel. However, in cases where the certificate holder or the other person uses personnel for both maintenance and required inspection work, there must be an actual change in the control of that person from the control of the maintenance unit to the control of the inspection unit. Additionally, if the air carrier allows its maintenance controllers to assign required inspection tasks, there must be a mechanism (control) in place that ensures that the person performing the inspection is under the supervision and control of the inspection unit, not the maintenance

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controller or maintenance unit. The certificate holder must describe in its manual how it and other persons will comply with this requirement. It is important for both management and maintenance personnel to know and understand this principle and recognize the authority and control of the inspection unit for required inspections.

2) The second part of the regulation pertains to the supervision of the person performing the required inspection by the inspection unit. Although the regulation does not specify a requirement for an inspection unit supervisor, it is both logical and apparent in the reading of the regulation. Additionally, it is supported by the requirements in §§ 121.365(b) and 135.423(b) for an organization to be considered adequate to perform required inspection work. The supervisor can be the Chief Inspector or any other person the certificate holder chooses. However, it is important that the supervisor be separated from the maintenance unit in responsibility, authority, and interest to ensure the independent nature of the required inspection. The certificate holder must describe in its manual the requirements necessary to ensure compliance with this regulation for itself and other persons that perform required inspections for it.

3-3886 MANUAL REQUIREMENTS.

A. Organizational Chart or Description. Sections 121.369(a) and 135.427(a) require the certificate holder to put in its manual a chart or description of its required inspection organization required by §§ 121.365(b) and 135.423(b) plus a list of persons with whom it has arranged for the performance of its required inspections, including a general description of that work. The certificate holder must keep this information current and available to the Federal Aviation Administration (FAA) for inspection. It must be readily available for use by the certificate holder's personnel that need this information to perform their jobs, such as persons involved in contract maintenance, persons involved with the repair of parts, or persons involved with training or auditing.

B. Designation of Items of Maintenance and Alterations as Required Inspection Items (RII).

1) Sections 121.369(b)(2) and 135.427(b)(2) require the certificate holder to designate maintenance and alteration tasks as RII and list them in its manual. RIIs must include at least those maintenance and alteration tasks that, if not properly performed or if done with improper parts or materials, could result in a failure, malfunction, or defect that would endanger the continued safe flight and landing of its aircraft. When determining maintenance and alteration tasks as RIIs, it is important that the certificate holder consider and account for the phrases, "at least those," "that could result," and "improper parts or materials."

NOTE: Due to the varied maintenance systems used and different configurations of the same model of aircraft operated by the various certificate holders, the regulations do not include a listing of the items, which the certificate holder must inspect on each aircraft. Each certificate holder must determine the list of RIIs and include them in its manual.

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2) RIIs relate directly to flight safety. Therefore, the certificate holder should consider all of its RIIs with the same safety of flight consideration and emphasis, even if accomplishing an individual RII adversely affects its flight schedule or relates to a scheduled or an unscheduled task or arises at an awkward time or at an inconvenient location. The certificate holder must base its methods for determining its RIIs on regulatory requirements and sound principles. Personnel responsible for making the RII determinations must be qualified to determine such things as failure consequences resulting from improperly performed maintenance, alterations, and the use of improper parts and materials. The certificate holder should identify the person(s) authorized and accountable for determining RIIs. The certificate holder might consider using the expertise of the aircraft manufacturer and manufacturer's instructions from the technical maintenance documents that are reflected as notes, cautions, warnings, comments, alerts, or otherwise identified as significant steps in the maintenance task. These are a good indication that there are aspects of the maintenance task that if done improperly could result in creating an unsafe condition. Additionally, the National Transportation Safety Board's (NTSB) Aircraft Accident Database & Synopses contains accident information relating to RII failures, which can be useful. However, the responsibility for determining and listing RIIs remains with the certificate holder.

3) In order to maintain its significance, the list of RIIs should not be over-inclusive. Instead, the certification holder should identify specific items of inspection for each aircraft (it is inappropriate to designate entire systems as RII).

4) Some examples of items that may call for required inspections are proper torque and retainment device installation for engine and landing gear mounting hardware; correct travel, cable routing, tensioning, hardware fitting/torque and retainment device installation for flight control surfaces; and certain emergency equipment installations for post-installation activation and rigging.

5) Each operator must evaluate its maintenance program to identify RII. The operator may identify such items with the abbreviation "RII," an asterisk, or any similar method.

C. Method of Performing Required Inspections. Sections 121.369(b)(3) and 135.427(b)(3) require the certificate holder to include in its manual the method of performing required inspections. The method is the way, technique, manner or process used to perform the required inspection. Methods can be visual, functional, and/or operational, and include such things as tests, checks, measurements, weighing, listening, feeling, tapping, and probing. The method must include any applicable inspection aids or equipment such as a flashlight, mirror, magnifying glass, boroscope, video equipment, rigging gauges and measurement equipment.

D. Designation by Occupational Title. Sections 121.369(b)(3) and 135.427(3) require the certificate holder to include in its manual a designation by occupation title of personnel authorized to perform each required inspection. Examples of occupational titles are aircraft mechanic, aircraft inspector, aircraft maintenance supervisor and aircraft maintenance foreman.

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E. Procedures for the Re-Inspection of Work Performed Under Previous Required Inspection Findings (Buy-Back Procedures). Sections 121.369(b)(4) and 135.427(b)(4) require the certificate holder to include procedures in its manual for the re-inspection of work performed under previous required inspection findings (buy-back procedures). The air carrier's procedures should include how required inspection personnel will document a discrepancy found during the required inspection. Additionally, the procedures should include how maintenance personnel will document the work performed to correct the discrepancy. Finally, the procedures should include how required inspection personnel will re-inspect the work performed to correct the discrepancy. To ensure the performance of the re-inspection as required by §§ 121.369(b)(6) and 135.427(b)(6), the air carrier should consider adding the procedural requirement to open or note a new required inspection requirement record for each discrepancy found during a required inspection. The certificate holder should be aware that a buy-back event could be an indicator of a deficiency in the required inspection program. Therefore, buy-back events should be imputed into the air carrier's Continuing Analysis and Surveillance System (CASS) for analysis.

F. RII Procedures, Standards, and Limits. Sections 121.369(b)(5) and 135.427(b)(5) require the certificate holder to include in its manual the procedures, standards, and limits necessary for required inspections and for acceptance and rejection of the inspected items. Section 121.135(a)(1) requires that the procedures include instructions and information necessary to allow the personnel concerned to perform their duties and responsibilities with a high degree of safety. The certificate holder must clearly define its procedures so that any inspector performing the required inspection will conduct it in a repeatable and consistent manner.

1) The certificate holder should establish when to perform the required inspection. If performed during the maintenance task or part of a scheduled maintenance check, the certificate holder must have controls in place to prevent any subsequent maintenance from invalidating the required inspection. It might be necessary to perform the inspection at a specified step in the maintenance task to prevent such things as skin, panels or doors from covering the inspection item. Similarly, it might be better to perform the required inspection at the end of the task following completion of work. If performed at the completion of the work task, it is vital that the person performing the required inspection get a detailed hand-down from the person that performed the work rather than relying on just the maintenance signoff. Sometimes, maintenance personnel move, disconnect, or disturb other things to gain access to the intended maintenance or alteration task. Although the required inspection is a focused inspection, the person performing it must be aware of the general condition of the work area. If the inspector is not aware of these things, improper maintenance can go unnoticed. The certificate holder should include in its manual its communication requirements for required inspection and maintenance personnel concerning work performed. Required inspection personnel should not assume that maintenance personnel performed proper maintenance until the inspector can verify the proper performance of maintenance. An example from NTSB accident data shows an aircraft accident resulting from a mechanic using only part of a procedure to perform the maintenance task without informing the inspector. Had the mechanic informed the inspector of exactly what he or she did, the inspector might have realized the problem and prevented the accident.

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2) The certificate holder should clearly identify its RII requirements on work forms, job cards, Engineering Orders (EO), and the like, or by any other method consistent with its maintenance program. Certificate holders whose programs rely on the use of task cards or job cards to accomplish maintenance and inspections on flight control systems should ensure it bases its procedures and any drawings on the aircraft manufacturer's maintenance manual. Additionally, certificate holders should include discrete (separate or distinct) tasks with individual inspection signoff requirements for post-rigging verification.

3) The certificate holder must have those procedures, standards, and limits necessary for the accomplishment of its required inspections and for the acceptance or rejection of each of its RII. As the certificate holder will not find RIIs or procedures, standards, and limits for RIIs in an Original Equipment Manufacturer (OEM) manual, it will have to develop these and put them in its manual. The certificate holder should write its RII procedures to inspection personnel and clearly state, at a minimum, what to look at (items of maintenance and alterations), how to look at it (method), what to compare it to (standard) and what is acceptable or not (limits). The certificate holder must provide its required inspection procedures, methods, standards, and limits in a useable format for ease of use.

G. Procedures to Ensure the Performance of All Required Inspections. Sections 121.369(b)(6) and 135.427(b)(6) require the certificate holder to have procedures in its manual for ensuring that all required inspections are performed. The certificate holder should specify who is responsible for completing each step of the required inspection process. The certificate holder should utilize controls in its required inspection program that ensure RIIs are identified, documented, and completed prior to releasing the aircraft to service, whether or not the certificate holder performs or other persons authorized by the certificate holder perform the maintenance and inspection. The certificate holder's procedures should state who is responsible for identifying and documenting an RII during both scheduled and unscheduled maintenance and who is responsible. Methods for identifying an RII for a maintenance task can vary, but the certificate holder should require, at a minimum, early identification and documentation of the required inspection requirement and end with a final review of the paperwork at the completion of work and prior to releasing the aircraft to service. A job or task card that includes the RII requirement is a very useful and effective means of controlling the completion of the RII during scheduled maintenance. Procedures and controls also need to account for those instances when an unplanned required inspection is triggered by maintenance and alterations performed. In these cases, the certificate holder should consider the documentation of the required inspection requirement in the aircraft logbook. The certificate holder should require the logbook entry as early as possible in the maintenance task.

H. Persons Who Perform Any Item of Work Cannot Perform the Required Inspection. Sections 121.369(b)(7) and 135.427(b)(7) require the certificate holder to include in its manual instructions to prevent any person who performs any item of work from performing any required inspection of that work. This includes any person who provides on-the-job training (OJT) to any person who performs an item of work. A primary concept of the RII function is that the person performing the item of work may not perform the required inspection on that item of work. The regulation recognizes the importance of the independent nature of the required inspection. As previously stated, it is important that the certificate holder identify required

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inspection requirements as early as possible during the maintenance task so that everyone is aware of the requirement and supervision or management can take steps to assign an inspector independent of the maintenance task. Regulatory compliance problems are likely to arise during periods of unscheduled maintenance performed away from a company's maintenance facility due to limited resources. Therefore, it is important that the certificate holder address these different situations in its manual and specify its method of control.

I. Countermand. Sections 121.369(b)(8) and 135.427(b)(8) require the certificate holder to include instructions and procedures in its manual to prevent the reversal of any decision of an inspector regarding any required inspection by persons other than supervisory personnel of the inspection unit. (Subparagraph 3-3885B discusses supervisory personnel and the inspection unit.) Additionally, a person at the level of administrative control that has overall responsibility for the management of both the required inspection functions and the other maintenance, preventive maintenance, and alterations functions may countermand an inspector's decision. Volume 3, Chapter 43, Section 1, Figure 3-131A, best illustrates the responsible person at the level of administrative control. The intent of the regulation is to ensure that only certain responsible and accountable persons countermand any inspector's decision regarding a required inspection if necessary. (See Volume 3, Chapter 43, Section 1, Table 3-125.) The certificate holder should include in its manual the positions (titles) it authorizes within its organization to countermand an inspector's decision. Additionally, the manual should include procedures for documenting the countermand including signatures and the basis or reason used for the countermand.

NOTE: Although regulations recognize countermand elements in the required inspection process, its use could be an indication of a serious problem or deficiency in the certificate holder's organization. It could be an indication of such things as a poor safety culture, inadequate scheduling of maintenance, inadequate training or experience of inspection personnel, or deficient required inspection procedures. To ensure its proper use, the certificate holder should include the countermand event in its CASS.

J. Work Interruptions. Sections 121.369(b)(9) and 135.427(b)(9) require the certificate holder to include procedures in its manual for ensuring the completion of required inspections interrupted because of shift changes or similar work interruptions before the release of the aircraft to service. Planned or unplanned interruption to required inspections poses a high risk to the safe operation of the aircraft. To mitigate the risk, the certificate holder should provide required inspection personnel with initial and recurrent maintenance resource management training that includes human factor training. Additionally, a simple but effective control for ensuring the completion of required inspections is the use of work forms designed for the recording of any interruptions during the required inspection. This form should be part of the work package for the aircraft and the certificate holder or persons performing work for it should review the form prior to releasing the aircraft to service. Another effective control for interruptions is the use of hand-downs, both verbal and written. Whatever method used, the certificate holder must document it in its manual and include the necessary provisions for other persons performing required inspections for the certificate holder.

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K. Other Persons Performing Required Inspections. As provided in the regulations, the certificate holder may arrange with other persons for the performance of required inspections on its aircraft. However, this does not relieve the certificate holder of its responsibility for compliance with required inspection regulations and its manual. Therefore, if the certificate holder uses other persons to perform required inspection, it must describe in its manual in sufficient detail how it will ensure compliance. There should be no differences in the certificate holder's required inspection program and the required inspection program of the certificate holder's maintenance providers. The certificate holder should consider listing each required inspection regulation and addressing it in its manual both for itself and for a maintenance provider, if applicable. The FAA highly recommends that the certificate holder use a written contract to document clearly and adequately its required inspection requirements with maintenance providers. The certificate holder should locate an adequate number of its qualified and authorized required inspection employees at the aircraft inspection site to monitor the performance of required inspections by others to ensure compliance with written instructions. Notwithstanding the importance of all required inspections, special attention should be given to required inspections involving flight control systems. The certificate holder should establish alternate procedures for those instances when a need arises for a required inspection at the work site and the certificate holder representative is not available. The certificate holder must have a mechanism for the collection of data generated by the performance of required inspections by other persons for input into the certificate holder's CASS to ensure the identification and correction of required inspection program deficiencies.

L. Certificated, Trained, Qualified, and Authorized. The certificate holder must have requirements in its manual for selecting, training, qualifying and authorizing required inspection personnel.

1) The certificate holder should establish criteria for the selection of required inspection personnel. Because of the required inspection's connection to the safe operation of the aircraft, the certificate holder's standards should be high. The certificate holder should establish a process for identifying and selecting inspector candidates. Mentor programs are useful in providing experience to personnel desiring to become inspectors. The process should focus on individual qualities normally associated with quality, such as responsibility, attention to detail, quality work habits, knowledge and experience, ability to focus and stay focused and no history of mistakes or errors. The certificate holder might consider establishing an inspector panel for interviewing inspector candidates.

2) The certificate holder must establish specific training requirements for required inspection personnel. Training should be specific to required inspection subjects. It should be a combination of formal classroom training, OJT, and recurrent training. It should also include such things as procedural training, inspection techniques, use of inspection aids or equipment, and human factor training.

3) The certificate holder should closely monitor the new inspector for a period following the person's training, qualification, and required inspection authorization. The certificate holder must include procedures in its manual for identifying and authorizing required inspection personnel, both within its organization and within organizations that perform required

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inspections on its behalf (refer to §§ 121.369(b)(3) and 135.427(b)(3)). The certificate holder must ensure it grants RII authorization only to persons trained, qualified, and holding an appropriate airman's certificate.

NOTE: Even though an airman certificate is required by regulation, the person with the certificate performing the required inspection is not exercising the privileges of his or her certificate. The air carrier must comply with the requirements of § 121.378(a) and ensure the person it uses is appropriately certificated. The certificated person does not get the authority to perform the required inspection from his or her certificate. The authority comes from part 121 and the air carrier.

4) The certificate holder must formally notify each individual of his or her RII authorization as well as its scope (refer to §§ 121.371(d) and 135.429(e)). The regulations require that each certificate holder maintain, or determine that each person with whom it arranges to perform its required inspection maintains, a current listing of trained, qualified, and authorized persons who conduct required inspections. The certificate holder must identify the person by name, occupational title, and the inspections authorized to perform. The certificate holder will make the list available to the Administrator upon request. The certificate holder or person with whom it arranges to perform its required inspection must give written information to each person so authorized, describing the extent of the person's responsibilities, authorities, and inspectional limitations. Some certificate holders issue cards to required inspection personnel that show the person's authorization and any limitations. The use of cards has additional benefits in the control of inspectors such as expiration dates and recurrent training requirements.

M. Persons Using Other Persons to Perform RII Inspections. Sections 121.371(a) and 135.429(a) specify that a person may not use another person to perform required inspections unless they meet certification and training requirements and have been qualified and authorized to perform the inspection. The certificate holder must provide the method and means for identifying RII inspection personnel meeting the regulatory criteria. The certificate holder should identify in its manual the persons or job positions responsible for assigning or using RII inspection personnel. The certificate holder (or person with whom it arranges to perform its required inspections) shall give written information to each person so authorized describing the extent of his responsibilities, authorities, and inspectional limitations.

NOTE: Compliance with Section 121.371(a) and 135.429(a) is directed to the person who uses (assigns or directs) any person to perform required inspection tasks. It applies to both the certificate holder's organization and other persons performing maintenance and required inspections for the certificate holder. The certificate holder that directs, assigns, or uses any person to perform required inspections is responsible for ensuring that the person they use meets the regulatory and certificate holder's requirements.

N. Airworthiness Release or Appropriate Log Entry. Sections 121.709(a) and 135.443(b)(2)(ii) require the certificate holder or the person with whom the certificate holder arranges for the performance of the maintenance, preventive maintenance, and alterations, to

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prepare or cause to be prepared an airworthiness release or an appropriate entry in the aircraft log. The person preparing the airworthiness release or log entry must prepare it in accordance with the certificate holder's manual and certify, among other things, that an authorized inspector inspected all RIIs and determined the satisfactory completion of the work. A certificated mechanic or repairman must sign the airworthiness release or log entry. The regulation provides that, instead of stating the required inspection certification requirement, the certificate holder may state in its manual that the signature of an authorized certificated mechanic or repairman constitutes that certification.

O. Part 135 Rotorcraft. Section 135.429(d) provides that in the case of rotorcraft that operate in remote areas or sites, the Administrator may approve procedures for the performance of RII by a pilot when no other qualified person is available, provided:

- The certificate holder employs the pilot;
- It can be shown to the satisfaction of the Administrator the proper training and qualification of each pilot;
- The required inspection is a result of a mechanical interruption and is not a part of a CAMP;
- The pilot inspects each item after each flight until the item is inspected by an appropriately certificated mechanic other than the one who originally performed the item of work inspects the item; and
- Each item of work that is a required inspection item and is part of the flight control system shall be flight-tested and re-inspected before the certificate holder approves the aircraft for return to service.

P. Contract Maintenance. Although the regulations allow the air carrier to use another person to perform its required inspections, it does not relieve the certificate holder of its responsibility for ensuring that other persons perform the required inspections in accordance with the air carrier's procedures. Based on accident investigation findings on failed required inspections, the FAA highly recommends that the certificate holder assign a qualified and authorized employee at the inspection site to oversee the performance of required inspections by other persons. In cases where the assigned air carrier employee cannot be physically present at the work site such as during multiple shifts, there should be a method of contacting the assigned employee if any questions arise on a required inspection. There are additional requirements for air carriers who contract out the performance of essential maintenance. Essential maintenance encompasses any on-wing accomplishment of any maintenance or alteration that the air carrier has designated as an RII. Essential maintenance also includes the accomplishment of the required inspection itself. Essential maintenance does not encompass any off-wing maintenance. The air carrier must perform required audits prior to using essential maintenance providers. Additionally, the air carrier must list the essential maintenance provider in its manual. For more information on essential maintenance requirements, see Volume 6, Chapter 2, Section 40.

RESERVED. Paragraphs 3-3887 through 3-3890.

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VOLUME 3 GENERAL TECHNICAL ADMINISTRATION

CHAPTER 44 ASSESS CONTINUING ANALYSIS AND SURVEILLANCE SYSTEM FOR PARTS 121 AND 135

Section 1 Evaluating an Air Carrier's CASS

3-3891 PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) AND AIR TRANSPORTATION OVERSIGHT SYSTEM (ATOS) ACTIVITIES.

A. Maintenance.

- New: 3333.
- Revision: 3334.
- Surveillance: 3635.

B. Avionics.

- New: 5333.
- Revision: 5334.
- Surveillance: 5635.

C. ATOS. ATOS Safety Attribute Inspection (SAI) or Element Performance Inspection (EPI) Data Collection Tool (DCT), as appropriate, for the Continuing Analysis and Surveillance System (CASS) Element 1.3.11.

3-3892 OBJECTIVE. This section provides guidance and information on the design, implementation, functions, and other considerations of an air carrier's CASS.

3-3893 GENERAL.

A. Regulatory Requirements. Title 14 of the Code of Federal Regulations (14 CFR) part 121, § 121.373 and part 135, § 135.431 require an air carrier operating under part 121 or 135 to establish and maintain a CASS. These sections also allow the Federal Aviation Administration (FAA) to require revisions to an operator's maintenance program based on deficiencies or irregularities revealed by the CASS.

B. Background.

1) The FAA implemented the regulatory requirement for a CASS in 1964 in response to safety concerns and discoveries of systemic weaknesses in the maintenance programs of some air carriers. We identified these concerns during accident investigations and FAA surveillance activities accomplished during the 1950s. The FAA introduced the CASS as an element of a Continuous Airworthiness Program in a 1964 rulemaking that contained other elements such as a manual, an adequate maintenance organization, a maintenance recordkeeping system, Required Inspection Items (RII), and more.

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2) There is a requirement for a CASS for air carriers operating under part 121 and § 135.411(a)(2) applicability. CASS utilizes a systems-based approach, which permits an air carrier to identify and understand maintenance program deficiencies well enough to develop and implement permanent solutions for those discrepancies. CASS is a keystone of an air carrier's ability to produce Airworthy aircraft on a consistent basis.

C. Definitions.

1) Audit. Scheduled or unscheduled formal reviews and verifications to evaluate compliance with policy, standards, and/or contractual requirements.

2) Authority. The power to design or change fundamental policy or procedures without having to seek a higher level management approval. Authority is a permission; it is a right coupled with an autonomous power to accomplish certain acts or order others to act. Often, one person grants another authority to act as an employer to an employee, a corporation to its officers, or as a governmental empowerment to perform certain functions.

3) Carried Out by the Certificate Holder or Other Person. The certificate holder must maintain operational control over maintenance that any person performs on its aircraft. Operational control includes independently determining the scope and type of maintenance that may be required, when to accomplish that maintenance, and if the maintenance was done in accordance with its manual and program, regardless of who accomplished the maintenance.

4) CASS. The elements of the system are always working. For example, continuing surveillance means someone is always looking and collecting information. Continuing analysis means that someone is always analyzing the information that is always being collected.

5) Corrective Action. An action designed to eliminate or mitigate a deficiency that has been identified within the air carrier's maintenance program.

6) Deficiency. A condition which is insufficient or incomplete or where something required is lacking. In a CASS, it is something that is missing from the air carrier maintenance program that should be there, or it is something that is there but not producing the desired results. Alternatively, it could indicate that the maintenance program documentation is not being followed. For example, a program element that has failed and is not working or a program element that has faults and is not working as it should are deficiencies.

7) Effective. Producing or capable of producing a desired result. The maintenance program is producing the desired results when the following objectives are realized:

- Airworthy aircraft that have been properly maintained for operations in air transportation;
- Competent personnel;
- Adequate facilities and equipment; and
- All maintenance, preventive maintenance, and alterations are always performed in accordance with the certificate holder's maintenance program and manual.

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8) Establish and Maintain. "To establish" means that the air carrier develops a CASS that is appropriate for the type and scope of its operation. "To maintain" means that the air carrier keeps its CASS current and appropriate in response to changes in the type and scope of its operation.

9) Maintenance Program. The programs outlined in §§ 121.367 and 135.425, other sections of part 121 subpart L, part 135 subpart J, and described in some detail in the current edition of Advisory Circular (AC) 120-16, Air Carrier Maintenance Programs.

10) Maintenance. Inspection, overhaul, repair, preservation, and the replacement of parts, excluding preventive maintenance.

11) Performance. The act of doing something successfully; the successful execution of an action. In the CASS, performance means that the maintenance program is being accomplished or executed as outlined in the air carrier manual.

12) Person. An individual, firm, partnership, corporation, company, association, joint stock association, or governmental entity. It includes a trustee, receiver, assignee, or similar representative of any of them.

13) Preventive Action. Action to eliminate or mitigate the cause or reduce the effects of potential nonconformity or another undesirable situation.

14) Program. An organized list of procedures.

15) Responsibility. The obligation to ensure that a task or function is successfully carried out. Responsibility includes accounting for actions related to the task or function. This is a key attribute of operational control.

16) Risk. Risk is the degree of probability that hurt, injury, or loss will occur over a specific period of time or number of operational cycles. Risk has two elements: severity and likelihood. With regard to air carrier maintenance operations standards, the relationship between these two elements must be inverse.

a) Severity. The type of harm that will be inflicted if a particular event occurs. For air carrier maintenance programs, severity should be expressed in qualitative terms as a consequence of failure: safety, operational, economic, or environmental.

b) Likelihood. The estimated probability or frequency, in quantitative or qualitative terms, of an occurrence related to the hazard; an expression of the probability that a specific unsafe event will occur.

17) Risk Mitigation. A risk control measure. It refers to the process of modifying the system in order to reduce the risk.

18) Risk Management (RM). A formal process composed of identifying hazards, analyzing risk, assessing risk, and controlling risk. This process is embedded within the processes used to provide the product/service; it is not a separate process.

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19) Root Cause Analysis (RCA). The analysis of deficiencies to determine their underlying root cause.

20) System. A functionally related group of elements. In the CASS, the elements are:

- Surveillance;
- Analysis;
- Corrective action; and
- Followup.

3-3894 OVERVIEW OF A CASS.

A. Functions of the CASS. CASS functions as an air carrier maintenance program management tool that includes continuous and methodical monitoring and evaluation of an air carrier maintenance program. An air carrier's CASS uses a continuous, system safety based, closed-loop cycle of surveillance, data collection and analysis, corrective action, and followup to continually evaluate the performance and effectiveness of the maintenance program. Through the CASS, the air carrier ensures that it is performing the right maintenance at the right time and that it produces the intended results. The CASS is one of the tools an air carrier uses to exercise operational control over maintenance activities conducted on its aircraft.

NOTE: We cannot overstate that the CASS is a system and not a program. The primary responsibility for the CASS should be specific to an individual with the necessary authority, while coordination for the implementation of a CASS might be entrusted to a department.

1) CASS Monitors Maintenance Program Performance. The program performance (program execution) part of the CASS ensures that everyone, including all of the air carrier's maintenance providers, comply with the air carrier's manual and program and with all applicable regulations.

a) Generally, the program execution part of the CASS functions through a system of audits and investigations of operational events. The air carrier should consider each negative audit and each operational event as an indicator or symptom of a program or systemic failure. The air carrier should evaluate each one. However, depending on the results of the evaluation (risk analysis and risk assessment), every symptom or indicator may not require corrective action.

b) The program execution part of CASS should include a continuous cycle of both scheduled and unscheduled (proactive and reactive) surveillance and investigations, data collection and analysis, corrective action, and followup surveillance.

2) CASS Monitors Maintenance Program Effectiveness. The program effectiveness part of a CASS ensures that the maintenance program is producing the desired results. Primary indicators of the level of maintenance program effectiveness are the level of unscheduled maintenance and the rate of availability of the aircraft for use in air transportation.

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a) Generally, the program effectiveness part of the CASS functions through a system of data collection and analysis of operational data that results from operation of the aircraft. An operator should collect operational data and equipment failure data, which measures the output (results) of the maintenance program.

b) Since one of the primary objectives of a maintenance program is to produce Airworthy aircraft for operations in air transportation, data sets such as the rate of aircraft availability, the rate of unscheduled landings, and the rate of schedule and dispatch reliability are useful for this purpose. An operator can collect this data in relation to a particular aircraft or a particular fleet.

c) While the FAA does not mandate the specific data an operator should collect, the FAA does expect an operator to have an effective process designed to select appropriate, relevant, and useful types of collected data. This data selection process should also ensure that any data collected is useful for its intended purpose. Moreover, a periodic review of the type of collected data ensures that the collected data remains appropriate, relevant, and useful.

B. How CASS Does It. The CASS enables an air carrier to detect and correct discrepancies in all elements of its maintenance program by proactively looking for indicators and symptoms of deficiencies and reactively looking at the results of deficiencies. CASS monitors maintenance program performance and effectiveness through a systems approach using a closed-loop system of four major activities:

- Surveillance;
- Data analysis;
- Corrective action; and
- Followup.

C. CASS Surveillance and Analysis. The regulations require that a CASS accomplish surveillance and analysis of the air carrier maintenance program from two perspectives: performance and effectiveness. An air carrier conducts the first two activities in the CASS (surveillance and analysis) in two different ways. The primary basis for one activity is audits, while the primary basis for the other is operational data collection and analysis. The results of these two types of surveillance and analysis feed into the third and fourth basic CASS activities (corrective action and followup). Table 3-124, The Major Continuing Analysis and Surveillance System Activities, summarizes the flow of the four basic activities of a CASS.

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Table 3-124. The Major Continuing Analysis and Surveillance System Activities

VERIFY PERFORMANCE OF THE MAINTENANCE PROGRAM	VERIFY EFFECTIVENESS OF THE MAINTENANCE PROGRAM
1. Surveillance: Audit process. ▪ Create a risk-based audit plan. ▪ Perform work-in-progress audits. ▪ Perform transaction audits. ▪ Perform system audits. ▪ Identify hazards.	**1. Surveillance:** Data collection process. ▪ Select data sets. ▪ Collect operational data. ▪ Collect failure data. ▪ Identify trends, anomalies, and potential hazards.
2. Analysis: Identify hazards, accomplish risk analysis and assessment.	**2. Analysis:** Identify hazards, investigate adverse indicators, and accomplish risk analysis and assessment.
3. Corrective Action: Accomplish a Root Cause Analysis (RCA); develop, implement, and monitor a corrective action plan (CAP), as appropriate.	
4. Followup: Verify that the corrective action was effective and initiate risk-based followup surveillance planning, as appropriate.	

1) Surveillance. The air carrier conducts surveillance so it can gather information and collect data for use in the evaluation of all elements of its program (including its maintenance providers) from two different perspectives: performance and effectiveness.

a) Surveillance to verify performance involves the use of audits, specifically work-in-progress audits used to make sure the manual and program are being followed.

b) Surveillance to verify effectiveness involves the collection of operational data and aircraft systems failure data so that the air carrier can make conclusions about the degree of effectiveness of the maintenance program.

2) Analysis of Data. Data analysis is the identification of system deficiencies (hazards) in an air carrier's maintenance program through analysis of the various kinds of data that the air carrier has chosen to collect. Data analysis is also used to verify an acceptable level of program performance or effectiveness.

a) The performance (program execution) analysis function of the CASS is carried out through the analysis of data collected during the accomplishment of audits and investigations. These audits and investigations examine the actual accomplishment of the activities and tasks of a maintenance program element relative to the standard (i.e., the air carrier manual and the maintenance program). The accomplishment of audits and analysis of audit data serve to measure program execution.

b) The effectiveness (intended results produced) analysis function of the CASS is carried out through the analysis of collected operational data. Collection and analysis of operational data allows the air carrier to measure the output of the maintenance program relative to its objectives.

3) Corrective Action. CASS identifies deficiencies through analysis of the audit and operational data that it collects. However, based on the risk assessment performed during risk

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analysis, not all deficiencies will require corrective action. The level of risk might be of an acceptable level. For example, a number of mechanical delays or cancellations may be acceptable in the eyes of the air carrier. This can be acceptable as long as safety is not compromised.

a) When a CASS determines a risk to be of an unacceptable level, it will employ risk controls (corrective action) to deal with an identified deficiency and the cause(s) of that discrepancy.

b) When a CASS requires the development of a corrective action plan (CAP), it will address the causal factor(s) and provide a solution to prevent recurrence. Within a CASS, an RCA is used to identify the central causes of an event and facilitate effective corrective actions. A CASS will implement and monitor the plan through completion.

4) Followup. Followup is the very important function that ensures the corrective action has addressed the deficiency. The followup ensures that the corrective action accomplishes what the air carrier intended it to do and connects the closed loop back to surveillance. Based on the assessment of risk, the air carrier can perform additional surveillance and/or modify data collection processes.

D. RM in CASS.

1) In concert with the attributes of a good organization, personnel and resources for a CASS should be prioritized as part of the overall risk management process (RMP). RM facilitates the balancing act between assessed risks and practical risk mitigation.

2) RM serves to focus safety efforts on those hazards posing the greatest risks. Essentially, any methodology used to prioritize surveillance personnel and resources (as well as to formulate corrective action decisions later in the process) involves principles of RM.

3) The following elements compose a formal RMP:

- Identifying hazards;
- Analyzing risk;
- Assessing risk; and
- Controlling risk.

NOTE: The flow chart in Figure 3-131B, Overview of the Risk Management Process, summarizes an overview of the RMP. The elements of an RMP encompass the four major CASS activities (Table 3-124). You can find a detailed description of the RMP in paragraph 3-3898.

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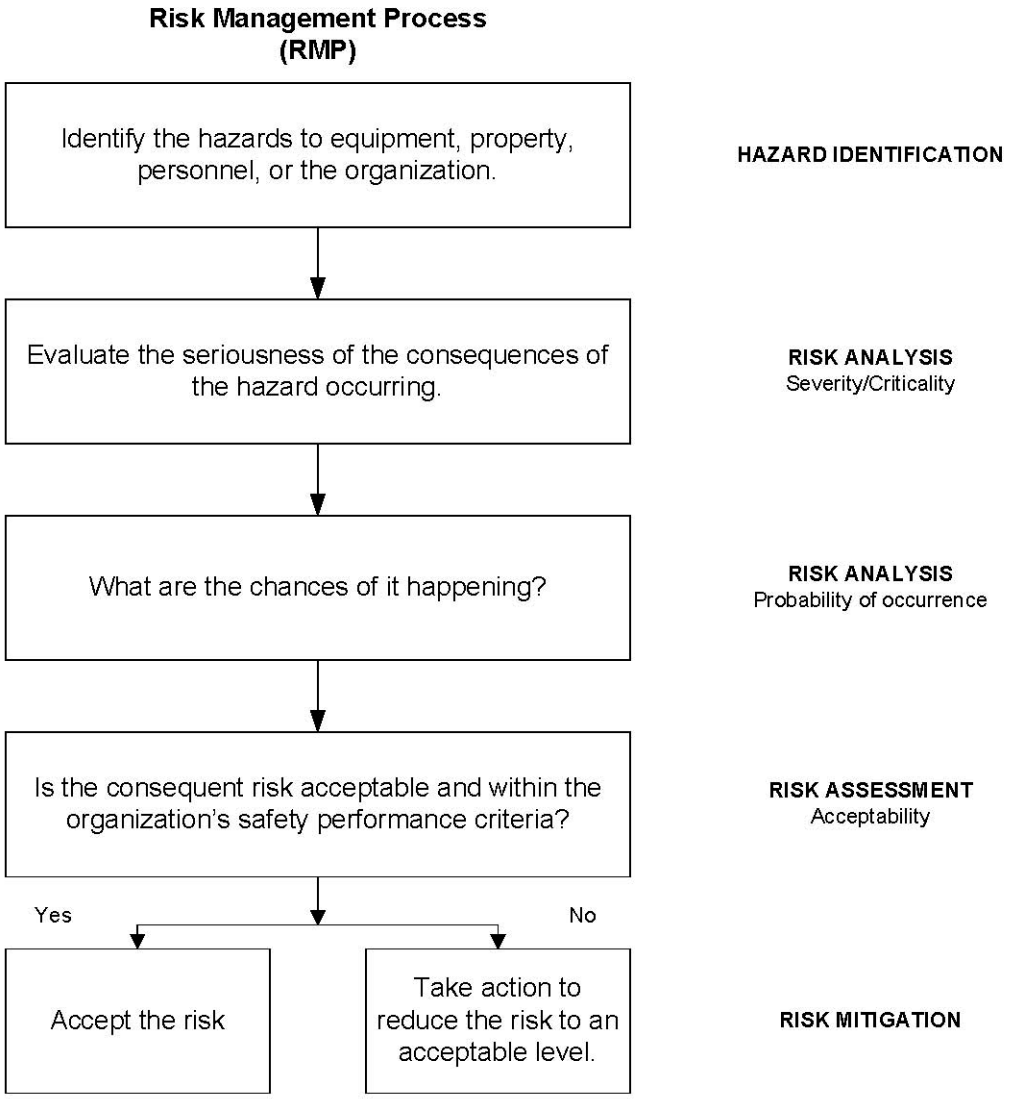
Figure 3-131B. Overview of the Risk Management Process



E. CASS in an Air Carrier's Operation. An air carrier should tailor its CASS to its individual operation. Therefore, to a large degree, what the CASS looks like will depend on the design of the maintenance organization and the size, complexity, and the level of flight operations of that air carrier.

1) The basic CASS functions are always the same, but the personnel who carry out each function and the manner in which the functions are carried out will be different from one air carrier to another. For example, an air carrier with a high level of daily aircraft utilization and a very large fleet of many different kinds of aircraft may have a separate department dedicated to performing CASS activities. On the other hand, an air carrier with a fleet of 25 aircraft, operating seasonally or weekly, may find it more efficient to use its quality assurance (QA) department to perform CASS activities. An on-demand operator with few employees and one or two aircraft

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having an average annual utilization of less than 1,000 hours may contract most of its CASS activities.

2) Regardless of the air carrier's size and level of flight operations, a well-structured CASS helps an air carrier exercise operational control over maintenance activities. This involves taking a systems approach to enhancing safety and eliminating deficiencies as well as systematically determining the level of performance and effectiveness of its maintenance program. This is a key to achieving operations with the highest possible degree of safety as well as a very high degree of efficiency.

F. What CASS Examines. A CASS monitors all 10 elements of the air carrier's maintenance program. A CASS accounts for the consequences of various internal and external influences on the maintenance program. The following are examples of some, but not all, of the items within each element that a CASS looks at. You should note that all of these items are examined by the surveillance of the maintenance program performance function of CASS; this is accomplished through audits. However, in addition to real time events such as accidents/incidents, CASS will address effectiveness discrepancies identified through the collection and analysis of operational data (i.e., RCA).

1) Airworthiness Responsibility.

a) Air carriers are primarily responsible for the performance of maintenance, including work done by maintenance providers on their aircraft. All maintenance, including work done by outside persons, must be done in accordance with the air carrier's maintenance program and maintenance manual.

b) An air carrier certificate makes the certificate holder a maintenance entity. Each person who accomplishes maintenance on a certificate holder's aircraft accomplishes it on the behalf of the certificate holder as an agent for the certificate holder. Consistent with the privileges and limitations of its air carrier certificate, air carriers, through their maintenance organization, are responsible for executing operational control over maintenance activities that anyone accomplishes on its aircraft. It is a requirement for air carriers to determine when maintenance is required, what maintenance is required, accomplishing the maintenance, determining if the maintenance was done satisfactorily, and approving its aircraft for return to service. Consistent with the regulations, an air carrier certificate holder may not delegate this responsibility to persons used by the certificate holder for any maintenance, preventive maintenance, or alterations.

2) Maintenance Manuals. CASS ensures that:

a) The content of all manuals, including maintenance manuals and technical content, is the responsibility of the air carrier. The basis of the manuals may be the Original Equipment Manufacturer (OEM) manuals or other information, but it is a requirement for the air carrier to use its own manual, not the OEM manuals.

b) Manuals, publications, and forms are useable, current, correct, and readily available to all personnel required to use them.

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c) Each person required to comply with the air carrier's manual has access to it during the performance of normal duties.

3) Maintenance Organization.

a) Consistent with the responsibility described above, air carriers must have a maintenance organization that is able to effectively exercise and maintain operational control over all persons performing, supervising, managing, and amending the maintenance program. The maintenance organization must be able to manage and guide its maintenance personnel and provide the direction necessary to achieve overall maintenance program objectives.

b) The individual with overall maintenance program authority and responsibility is the Director of Maintenance (DOM) who functions as the accountable manager for the maintenance program. The organization must clearly identify this individual within the organization and the individual must be qualified in accordance with 14 CFR part 119, §§ 119.65 and 119.67(c) or §§ 119.69 and 119.71(e), as appropriate. While retaining overall authority and responsibility, the accountable manager may delegate direct responsibility for elements of the program as appropriate for the size and structure of the maintenance organization.

c) The air carrier manual must contain a chart or a description of the maintenance organization showing clear authority and responsibility, including delegated responsibility, for the overall maintenance program and all of its elements and functions. The regulations require the air carrier to include a description in its maintenance manual of the duties and responsibilities for each position in the organization so that there is not a fragmented organizational system with high risk of confusion over who is responsible for a given task.

d) In order to be effective, an adequate maintenance organization must be able to demonstrate the following four organizational duties:

1. The duty to define the environment within which individuals conduct their tasks.

2. The duty to define the policies and procedures that individuals must follow and respect.

3. The duty to allocate the resources that individuals need in order to achieve safety and production goals.

4. The duty to investigate system failures and take all needed remedial action to avoid a repetition.

e) A maintenance organization will not be successful if it permits the following failures to occur.

1. Failure to understand the effect of people on safety and reliability of aircraft maintenance operations.

2. Failure to organize its employees' work.

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3. Failure to monitor its employees' work effectively.

4. Failure to implement corrective actions.

f) The performance of the RII function(s) must be organizationally separated from the performance of the other maintenance (including inspection), preventive maintenance, and alteration functions. This organizational separation must be below the level of the individual who has primary responsibility for the RII function, other maintenance, preventive maintenance, and alterations functions. In simple terms, this means that the part of the maintenance organization that accomplishes the maintenance (including inspection), preventive maintenance, and alterations function cannot be the same part of the maintenance organization that accomplishes your RII function.

4) Maintenance Schedule. The maintenance schedule sets out the appropriate item, task, and interval of the air carrier's scheduled maintenance effort. The FAA expects the air carrier's maintenance schedule to be task based and appropriately modified in accordance with the CASS data collection and analysis findings. The air carrier accomplishes the initial selection and the continuous validation of each scheduled maintenance task and its associated interval according to well defined criteria throughout the service life of the item, system, or structure. The maintenance schedule is proactive and designed to permit the item, system, or structure to do what it is designed to do. Notwithstanding design issues, the level of unscheduled maintenance is a primary indicator of the level of effectiveness of the maintenance schedule.

5) RIIs.

a) The air carrier has specific procedures, standards, and limits necessary for the acceptance or rejection of each RII and for periodic inspection and calibration of precision tools, measuring devices, and test equipment. You should note that the OEM's manuals and procedures do not contain RII procedures, standards, and limits as the air carrier must develop and document these.

b) Personnel authorized to accomplish RII inspections receive proper training and qualification for each RII task that they receive the authorization to perform.

c) Designated RII inspectors who perform an item of work do not perform the required inspection on that item.

d) The maintenance organization separates the performance of the required inspection functions from the other maintenance, preventive maintenance, and alteration functions.

e) The manual contains procedures to ensure that only supervisory personnel of an inspection unit, or the person who has overall responsibility for the RII function as well as the other maintenance, preventive maintenance, alteration functions, may countermand the decision of any RII inspector regarding an RII.

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6) Contract Maintenance. Vendors and suppliers have the qualifications and provide services and products according to the air carrier's maintenance program and manual. There should be no difference between the way work is done by air carrier personnel or by the air carrier's maintenance providers.

7) Personnel Training.

a) The air carrier must have a means to determine that all maintenance personnel, including maintenance provider personnel, are competent to accomplish their duties.

b) The air carrier has a training program for personnel (including inspection personnel and maintenance provider personnel) that determine the adequacy of accomplished maintenance.

c) The program ensures that personnel are competent to perform their duties.

8) Accomplishment and Approval of Maintenance.

a) Maintenance facilities and equipment, as well as the air carrier's maintenance providers' facilities and equipment, are adequate to perform the maintenance. Other than scope and location, there should be no difference in the standards for facilities and equipment between the air carrier and its maintenance providers.

b) Maintenance providers properly store, dispense, identify, and handle parts and components.

c) Maintenance providers properly calibrate tools and equipment.

d) Maintenance providers identify the requirements for specialized tools or training and provide training.

e) Maintenance providers perform maintenance and alterations according to methods, standards, and techniques specified in the air carrier's manuals.

f) Maintenance provider personnel properly document work interruptions and deferred maintenance in shift turnover records, and accomplish them according to applicable procedures.

g) Maintenance providers properly classify major repairs and major alterations (consistent with the 14 CFR part 1, § 1.1 meaning of major alteration or repair) and accomplish them in accordance with FAA-approved technical data.

NOTE: During 1953, the Civil Aeronautics Administration (CAA) published a list of repairs to specific parts as well as specific types of repairs that were considered major repairs in Civil Aeronautics Manual (CAM) 18. This major repair list was later adopted, unchanged, as part of 14 CFR part 43, appendix A.

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h) If the air carrier relies exclusively on this standardized list of major repairs to make the major/minor classification, it will result in the classification of some minor repairs as major and the classification of some major repairs as minor simply because the list has not been updated to include evolving airplane design and construction techniques such as composite structures, damage-tolerant design, and the high speed pressurized jet transport that did not exist in 1953.

i) Appropriately certified mechanics or repairmen, who are authorized by the air carrier, execute log entries and Airworthiness Release Forms.

j) Maintenance providers complete log entries and Airworthiness Release Forms according to the air carrier's written policies and procedures.

9) Maintenance Recordkeeping System.

a) Maintenance records and current status records are generated and retained in accordance with the air carrier's manual procedures.

b) Maintenance records and current status records are complete and correct.

c) Airworthiness Directives (AD) are appropriately evaluated, accomplished, and tracked.

d) Life-limited parts are identified and the current status time in service is tracked.

10) CASS.

a) CASS has four major activities that ensure, with a system-oriented, structured approach, that all elements of the air carrier maintenance program are properly executed and are consistently effective by design rather than by chance.

b) Senior management reviews CASS issues on a regularly scheduled basis. Meetings of CASS or maintenance management committees or boards are also held on a regular basis to discuss findings, analysis, and the progress of corrective actions. These meetings may address events, as well as statistical data and trends.

3-3895 PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. Knowledge of the requirements of parts 119, 121, and/or 135.

B. Coordination. This task may require coordination between the principal maintenance inspector (PMI) and the principal avionics inspector (PAI).

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3-3896 REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions):

- AC 120-16, Air Carrier Maintenance Programs.
- AC 120-79, Developing and Implementing an Air Carrier Continuous Analysis and Surveillance System.
- AC 120-92, Safety Management Systems for Aviation Service Providers.
- FAA Order 8000.369, Safety Management System Guidance.
- FAA Order 8040.4, Safety Risk Management Policy.

B. Forms. None.

C. Job Aids. None.

3-3897 VERIFY THE CASS ORGANIZATIONAL STRUCTURE.

A. Identifying CASS Organization Positions. Identify the positions within the company that have authority and responsibility for the CASS. The definitions below have meaning within the context of an air carrier's organization. Consistent with existing regulations, there should be a chart or description of the CASS organization in the air carrier's manual.

1) Authority is a permission; it is the power to create or modify fundamental policy or procedures without higher level review or approval. Authority also means the power to accomplish a function, as well as the power to assign responsibility for carrying out the various functions of the maintenance program. The individual with authority for the CASS may design or change the CASS without having to seek approval from a higher level of management. CASS procedures should include a process to modify or revise the CASS.

2) Responsibility is an obligation that comes with accountability to ensure the successful completion of tasks and functions in accordance with applicable policies, procedures, and standards. This work may be accomplished directly by the individual with the responsibility, or the responsibility for the work may be delegated. The individual with responsibility for the CASS has the obligation to carry out the functions of the CASS, including overseeing and managing any personnel who are assigned CASS functions and duties. Note that for smaller organizations where personnel share duties and may only carry out CASS functions part time, this oversight and management responsibility relates only to those part-time tasks.

B. Authority and Responsibility.

1) An individual or position within the maintenance organization should have authority for the CASS, and an individual or position within the maintenance organization should have overall responsibility for managing and implementing the CASS. An individual may have both responsibility and authority for the CASS.

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2) That individual might also have responsibility for other functions as well as the CASS. It is common for the individual with responsibility for CASS functions to delegate some or much of this work to others within the organization, depending on the size and staffing of the operator.

3) What the FAA expects is clear responsibility for the overall CASS functions so that there is not a fragmented system with a high risk of confusion over who is responsible for executing a given task or function.

4) The potential exists for a conflict of interest between personnel managing daily operations within the carrier and those who serve in an oversight role. Personnel with CASS responsibilities and duties should be as independent as possible from the day-to-day operations of the maintenance program. Theoretically, outside personnel contracted to perform such work for the air carrier conduct the most independent, objective audits.

5) Air carrier personnel who are conducting audits should work in separate departments from the departments performing the actual maintenance activities that are being audited. However, this is not necessarily feasible for small operators. At small operators, personnel performing CASS functions, particularly audits, may consist of one or more of the following:

a) Borrowed personnel from other shops or departments. The operator's procedures should include ways to avoid having these individuals assigned to audit areas where they normally work.

b) The company owner or chief executive officer (CEO), particularly if there are no other employees and the CASS audits are focused on outside vendors and maintenance providers because all or most of the actual inspection and maintenance work is accomplished through contracts.

c) Outside resources contracted to perform audits and analysis for the company.

d) Others deemed qualified by the operator to provide the operator with an independent objective audit, operational data collection, and analysis services that fulfill the requirements of a CASS.

3-3898 VERIFY THE CASS FUNCTIONS CONCERNING RM.

A. RMP. In an effective CASS, you should be able to identify the principles of the systematic RMP that:

- Establish a plan, including the scope of the process and priorities (e.g., detect and prevent noncompliance);
- Specify the areas of concern for surveillance and analysis (personnel, maintenance and inspection programs and organizations, operations, aircraft, facilities, systems);
- Identify hazards or potential threats to the operation;
- Determine how likely such hazards are to be realized and actually cause harm;

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- Determine the severity of the consequences if the hazard is realized;
- Express a combination of the likelihood and severity of harm as risk; and
- Evaluate the appropriate response to the identified risk.

B. Hazard Identification. The CASS should detect and correct deficiencies in all 10 elements of its maintenance program by proactively looking for indicators and symptoms of deficiencies and reactively looking at the results of deficiencies.

1) The CASS should identify the deficiencies (hazards) within the air carrier's maintenance program during the analysis of data. The proactive approach for identifying deficiencies involves setting surveillance priorities based on risk assessments aimed at maintaining compliance and safety in inspection and maintenance.

2) A CASS should take into account four principal potential sources of hazards:

- Personnel (hiring, capabilities, interaction);
- Equipment (design, maintenance, logistics, technology);
- Workplace (environment, sanitation); and
- Organization (standards, procedures, controls).

3) However, a CASS may recognize hazards through actual events such as an incident or accident (a more reactive approach). These events provide clear evidence of problems in a system and therefore provide an opportunity to investigate the event and identify the hazards putting the system at risk. In practice, both proactive processes and reactive measures can provide a valuable means of identifying hazards as a CASS should evaluate them.

4) An air carrier CASS should include clear procedures for determining:

- Who will be responsible to perform hazard identification;
- What personnel training or qualifications will be required to participate in hazard identification;
- When to perform hazard identification;
- How to accomplish the determination of a hazard; and
- How to document the hazard.

C. Risk Analysis and Assessment.

1) After confirming the presence of a hazard, and keeping with the concept of managing risk to an acceptable level, risk analysis is required to assess its potential for harm or damage. Analyze, assess, and rank all identified hazards in the order of their risk potential.

2) Risk analysis and risk assessment use a conventional breakdown of risk by its two components: likelihood of occurrence of an injurious mishap and severity of the mishap related to an identified hazard, should it occur. A common tool for risk decisionmaking and acceptance is a risk matrix similar to those in the current edition of U.S. Military Standard (MS) MIL STD 882, Standard Practice for System Safety, and the International Civil Aviation Organization (ICAO) Safety Management Manual (SMM). Figure 3-131C, Sample Risk Matrix,

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shows an example of one such matrix. Operators should develop a matrix that best represents their operational environment. The matrix should be consistent throughout the operator's organizational structure.

3) Risk analysis.

a) The definitions and final construction of the matrix is left to the operator's organization to design. Terms that are realistic for the operational environment will define each level of severity and likelihood. This ensures that each organization's decision tools are relevant to their operations and operational environment, recognizing the extensive diversity in this area.

b) An example of severity and likelihood definitions is shown in Table 3-124A, Sample Severity and Likelihood Criteria. Each operator's specific definitions for severity and likelihood may be qualitative, but quantitative measures are preferable, wherever possible.

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Table 3-124A. Sample Severity and Likelihood Criteria

Severity of Consequences			**Likelihood of Occurrence**		
Severity Level	**Definition**	**Value**	**Likelihood Level**	**Definition**	**Value**
Catastrophic	Equipment destroyed, multiple deaths.	5	Frequent	Likely to occur many times	5
Hazardous	Large reduction in safety margins, physical distress, or a workload such that operators cannot be relied on to perform their tasks accurately or completely. Serious injury or death to a number of people. Major equipment damage.	4	Occasional	Likely to occur sometimes	4
Major	Significant reductions in safety margins, reduction in the ability of the operator to cope with adverse operation conditions as a result of an increase in workload, or as a result of conditions impairing their efficiency. Serious incident. Injury to persons.	3	Remote	Unlikely, but possible to occur	3
Minor	Nuisance. Operating limitations. Use of emergency procedures. Minor incident.	2	Improbable	Very unlikely to occur	2
Negligible	Little consequence.	1	Extremely Improbable	Almost inconceivable that the event will occur	1

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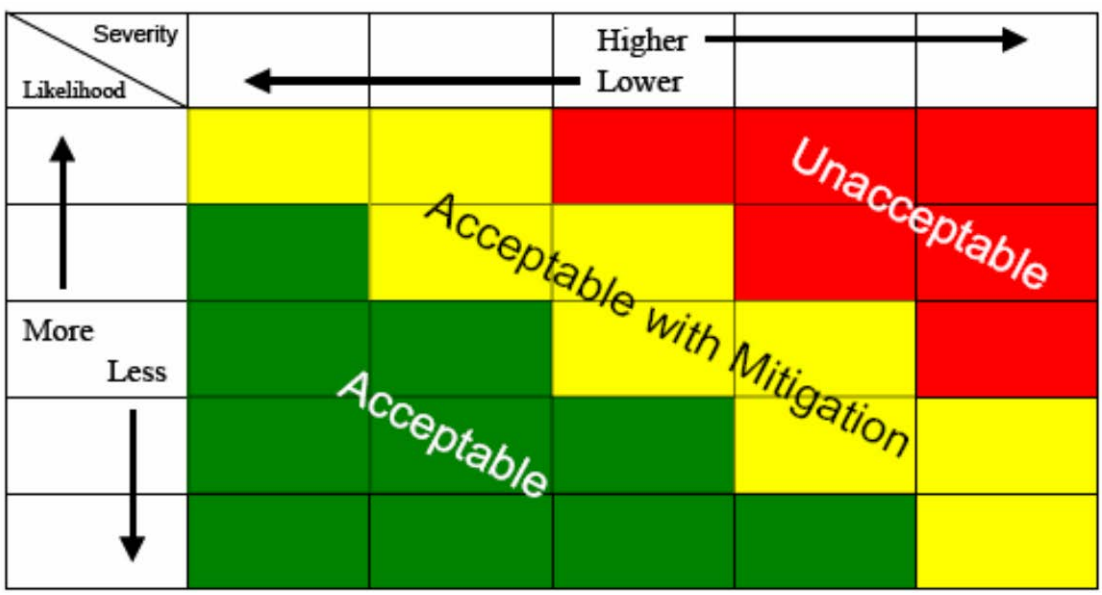
4) Risk assessment. In the development of its risk assessment criteria, we expect operators to develop risk acceptance procedures, including acceptance criteria and designation of authority and responsibility for RM decisionmaking. You can evaluate the acceptability of risk using a risk matrix such as the one illustrated in Figure 3-131C. The example matrix shows three areas of acceptability. Risk matrices may be color coded: unacceptable (red), acceptable (green), and acceptable with mitigation (yellow).

a) Unacceptable (red). Where combinations of severity and likelihood cause risk to fall into the red area, the risk would be assessed as unacceptable and further work would be required to design an intervention to eliminate that associated hazard or to control the factors that lead to higher risk likelihood or severity.

b) Acceptable (green). Where the assessed risk falls into the green area, it may be accepted without further action. The objective of RM should always be to provide an appropriate response to an identified risk.

c) Acceptable with mitigation (yellow). Where the risk assessment falls into the yellow area, the risk may be accepted under defined conditions of mitigation. An example of this situation would be an assessment of the impact of a nonoperational aircraft component for inclusion on a minimum equipment list (MEL). Defining an operational ("O") or maintenance ("M") procedure in the MEL would constitute a mitigating action that could make an otherwise unacceptable risk acceptable, as long as the defined procedure was implemented.

Figure 3-131C. Sample Risk Matrix



5) Assessing the risk of a hazard. CASS procedures for analyzing and assessing the risk of a hazard should include:

- Who will be responsible to perform risk analysis and assessment;
- Is the responsible person trained to perform risk analysis and assessment;

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- Specific set of criteria for how the determination will be made (i.e., detailed written procedures and a matrix);
- Who will have the authority to approve the assessment; and
- What levels of review, if any, will be performed.

6) Risk mitigation. The end result of the risk analysis and assessment is a decision: the risk is acceptable, acceptable with mitigation, or unacceptable. A risk control measure that is developed and implemented should be directly related to the final decision of the risk assessment.

3-3899 VERIFY THE CASS FUNCTIONS CONCERNING THE PERFORMANCE OF THE MAINTENANCE PROGRAM.

A. Surveillance of the Performance of Maintenance Programs.

1) The main tool for surveying whether the operator and its maintenance providers are properly performing the maintenance program is audits. An audit is a formal examination of the activities of an air carrier's or maintenance provider's departments or areas as compared to a standard, which is the air carrier's program as written in its manual. The air carrier's audits should be designed to measure an air carrier's and maintenance provider's compliance with their maintenance program requirements. The maintenance program itself must ensure that the maintenance provider accomplishes all maintenance activities in accordance with the processes and procedures of the maintenance program (§§ 121.367 and 135.425).

2) There are four types of audits usually used by air carriers. Generally, the differences are who accomplishes the audits and who the audit looks at.

a) Internal audits are performed by air carrier audit personnel on air carrier activities.

b) External audits are performed by air carrier personnel on activities of outside entities or maintenance providers.

c) A specific individual or position within a department, shop, or maintenance provider performs self-audits "in house."

d) Third parties (the FAA, Coordinating Agencies for Supplier's Evaluation (C.A.S.E.), Department of Defense (DOD), etc.) perform third-party audits on the air carrier or maintenance provider.

3) There are at least three audit methods used by air carriers. Generally, the differences are the audit objective and what the audit looks at.

a) The work-in-progress method audit is the primary type of method that we expect the air carrier to use. The purpose of these audits is to determine if the worker is following the manual. This is a requirement of §§ 121.367(a) and 135.425(a). A negative finding is a program deficiency under the CASS rules and must be addressed. This follows the plain

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language meaning of the CASS regulation (i.e., the performance of the maintenance program; are they doing what the program requires?).

b) The transaction method is used primarily for reviewing records and serves to see if the maintenance program standard for the record form, record procedures, record completion, and record accuracy standards of the program are being achieved.

4) The systems method is a high-level, comprehensive, and documented examination of all of the activities, records, processes, and other elements of an air carrier or maintenance provider's various systems, to determine their conformity with the requirements of a standard such as the air carrier's maintenance program. These audits can also identify various latent faults in the air carrier's or maintenance provider's overall systems. These audits are usually, but not always, accomplished by a professional audit agency and result in a written and detailed report that is used by senior management to make corrections to the systems.

5) The operator's auditing process should have written procedures that include the scheduling of audits. The CASS must address both internal and external audits.

NOTE: If your operator assigns an onsite representative at a maintenance provider, you should ensure that the air carrier's CASS procedures cover this individual(s)' surveillance activities. These are classed as work-in-progress audits. Typically, these individuals will observe a noncompliance with the air carrier's manual and ensure that the maintenance provider corrects the noncompliance usually within that same day. These events must be recorded and input to the air carrier's CASS documentation system for analysis and evaluation. Otherwise, a pattern of noncompliance with the air carrier's program and manual may go undiscovered by air carrier and maintenance provider management personnel.

6) CASS procedures should include a risk-based methodology for determining priorities and for establishing and adjusting audit cycles (for example, 12-, 18-, 24-, or 36-month cycles) so that resources are focused on the most pressing issues. You should note that the RMP may show that a department or maintenance provider self audit is applicable and effective.

7) Although the majority of the inputs to this process would be generated internally, one additional input may be the results of outside audits of the operator or its vendors conducted by entities other than the operator. For example, the results of audits or inspections conducted by the FAA or the DOD may be useful by providing an operator with:

- Specific findings requiring an RCA and possible corrective action; and
- Information useful in focusing the operator's own audits and operational data collection.

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B. Scheduling Audits. The operator may approach this initial scheduling task in many different ways, ranging from resource allocation based on company experience and very basic analysis to the use of a sophisticated, software-supported risk analysis process. Within this range of possible methodologies, expect the operator's CASS audit scheduling procedures to contain processes to systematically make those decisions that are compatible with the size and complexity of its operations.

C. Safety and Operational Objectives. Encourage your operator to make this process as structured as possible. The operator should place priority first on safety and regulatory compliance and second on issues of operational efficiency. However, an effective CASS will meet all of these objectives.

1) To identify the areas to audit and to set priorities, the CASS process should include consideration of factors in outside reports. These factors could include inspections, reports, special studies, or audits conducted by outside entities such as the FAA, DOD, Department of Transportation (DOT), Office of the Inspector General (OIG), or National Transportation Safety Board (NTSB). Outside reports may address:

- Information specific to the operator or its vendors;
- Information related to the industry as a whole and of interest to the operator; or
- Information about an accident, incident, procedure/process, or equipment type that is relevant.

2) The operator should equip CASS auditors with checklists to ensure consistency and completeness of audits. The accountable manager for the CASS should ensure that the checklists are updated as needed. The checklists should be written in a manner that evaluates compliance with the 10 elements of the maintenance program. An auditor should also be permitted a level of flexibility to ask questions not contained in the checklist if he or she finds an area that requires further investigation.

3) An operator's procedures should include identification of all areas that need to be audited, along with a process for updating this list. The following list presents examples of areas operators should consider for routine audit. A CASS audit should verify that:

a) Manuals, publications, and forms (paper and electronic versions) are useable, up to date, accurate, and accessible to users when they are performing assigned duties.

b) Maintenance and alterations are performed according to the methods, standards, and techniques specified in the operator's manuals, including ensuring that major repairs and alterations are properly classified and accomplished consistent with technical data approved by the Administrator.

c) The maintenance provider properly stores, dispenses, identifies, and handles parts and components.

d) ADs are appropriately evaluated, accomplished, and tracked.

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e) Aircraft modifications that have been installed as a result of AD requirements have not been removed or modified by subsequent repairs, alterations, or other modifications.

f) Maintenance providers generate maintenance records in accordance with manual procedures and are complete and correct.

g) RIIs are identified and addressed according to the operator's procedures.

h) Authorized individuals execute §§ 121.709 and 135.443 Airworthiness Release Forms and log entries according to the operator's procedures.

i) Maintenance providers accomplish shift turnover records, work interruptions, and deferred maintenance according to applicable procedures.

j) Maintenance facilities and equipment, including base and line stations and contract maintenance providers' facilities, are adequate for the work that is to be done.

k) Personnel, including those of contract maintenance providers, are qualified and competent to accomplish their duties.

l) Tools and equipment are properly calibrated.

m) Requirements for specialized tools or training are met, such as for nondestructive testing, Category II/III maintenance, and run-up/taxi.

n) Computer programs for the maintenance program are used in accordance with specifications.

o) Maintenance providers, vendors, and suppliers provide services and products according to the operator's policies and procedures.

p) Each aircraft released to service is Airworthy.

4) CASS audits should be primarily proactive, searching out potential problem areas before they can result in undesirable events. However, CASS procedures should also address how to direct unscheduled audits in response to events or a series of events. For example, rejected takeoffs, unscheduled landings, in-flight shut downs (IFSD), accidents, or incidents may indicate the need for special audits or surveillance under a CASS.

5) One of the primary purposes of a CASS is to detect and analyze trends for indications of program weaknesses or deficiencies. For example, CASS auditors would not necessarily audit a single maintenance-related rejected takeoff, although the CASS would investigate the event as part of the reactive function. A CASS would, however, consider whether that instance indicated a need to focus audits on a particular area from the trending proactive point of view.

6) Auditors and analysts should maintain informal lines of communication with personnel in the other departments so that maintenance personnel can discuss concerns they may

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have. Through this informal communications process, the operator can learn about potential hazards in the system. For example, the operator may learn about an event that could have occurred but, because of some intervention, did not. This event would be known to shop personnel but is otherwise difficult or impossible to detect in routine audits. With informal lines of communication open to shop personnel, a CASS may detect this near-event. You should ensure that the operator's CASS procedures address how to encourage this type of communication and interaction.

D. Analysis of Audits.

1) Audit results should undergo an analysis to identify a deficiency or a real/potential hazard in any aspect or element of the maintenance program. The objective of the audit analysis is to allow the operator to address the problem in such a way as to avoid recurrence of the deficiencies. To the extent possible, the operator should set forth the analysis process in the CASS documentation.

2) The analysis tells operators where to allocate resources and helps them understand what was identified. RM principles should be incorporated into the analysis process. The analysis will help CASS personnel determine the level of priority that the issue merits and what type of additional technical expertise may be required to complete the RCA and evaluate corrective action options.

3) The analysis process should be as objective as possible to avoid any tendency to promote individual or commercial interests. The more thorough the analysis, the greater the likelihood the operator will uncover why the system deficiency occurred and how the organization can respond definitively.

4) The analysis process starts during the audit itself, because auditors must collect information for later analysis. If a CASS is to uncover a procedural weakness, for example, information about the procedure must be collected. This should be factual and objective information that does not contain premature judgment about a root cause.

a) Auditors and analysts should be encouraged to be inquisitive and think in terms of "what if?" so that the CASS functions proactively, detecting problem areas or trends before they can lead to an accident, incident, or infraction of regulations.

b) For example, what if event X occurred in conjunction with observed condition Y? While audits are designed mainly to verify that an operator is performing maintenance in accordance with its manual, the regulations, and applicable requirements, auditors and analysts should also be alert for systemic deficiencies.

c) There may be procedures in the manual that are correctly followed but that have become outdated, conflict with other manual procedures, or for some other reason are in need of a change. This assessment of the system design should also place priority on finding the systemic or root cause of a program deficiency over seeking to assign personal blame at any level of the organization.

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d) This inquisitive approach should spread throughout the CASS organization, from determining audit priorities and scheduling through auditing and analyzing, including monitoring and evaluating corrective actions. The end result for this system assessment is seeking out the identification of new or potential hazards.

5) The audit analysis process is typically more qualitative than the operational data analysis. Operators may find it useful to manage the collected data through database or quantitative applications. Be aware that this approach does not have to be complicated or costly. The level of formality and sophistication should match the operator's conditions.

3-3900 VERIFY THE CASS FUNCTIONS CONCERNING THE EFFECTIVENESS OF THE MAINTENANCE PROGRAM.

A. Surveillance of the Effectiveness of the Maintenance Program.

1) The main tool for assessing whether the air carrier's maintenance program is effective is the collection of operational data (data resulting from airplane operations). This way, the output of the maintenance program can be measured. However, not all operational data or information may be useful for determining maintenance program effectiveness.

NOTE: Consistent with the "effectiveness" part of the CASS regulation, the primary type of effectiveness surveillance that the operator should be accomplishing is the collection of operational data.

2) A primary goal of air carrier maintenance programs is to ensure that each air carrier aircraft released to service is Airworthy, as well as to provide the maximum level of availability for operations in air transportation. However, in order to consistently reach these goals, the air carrier must have a means of determining if the maintenance program is producing the intended results.

3) Generally speaking, at the end product level, an indicator of the effectiveness of the maintenance program is the amount of time an air carrier aircraft is not available for operations in air transportation due to issues controlled by the maintenance program. This particular effectiveness indicator can be broken down into fleet availability or individual aircraft availability, and broken down still further to the reliability of aircraft systems, subsystems, and components. In simple terms, the amount of unscheduled maintenance that reduces the availability of an air carrier aircraft for operations in air transportation is a primary indicator of whether or not the maintenance program is producing its intended results.

B. Collecting Operational Data.

1) Air carrier operational data collection systems under the CASS effectiveness activity are critical to the air carrier's ability to determine the level of effectiveness of its maintenance program. These systems should have capabilities for collecting, storing, managing, and retrieving all types of operational data that the air carrier can use to help it determine the level of maintenance program effectiveness.

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2) Current systems that collect information regarding the status of aircraft structures, systems, and engines have a wide variance ranging from simple paper systems administered manually by air carrier personnel to the very sophisticated, complex, and automatic, real-time data collection systems that use information collected from sensors embedded all over the aircraft. As of this writing, there are operational data collection systems planned that will manage, and sometimes repair, system faults through automatic computer activity. Newer transport category aircraft are delivered with sophisticated electronic, propulsion, flight control, and structural monitoring and data acquisition systems.

3) In recent years, an increased emphasis has been placed on using these automatic data collection capabilities, in conjunction with emerging sensor, data processing, and systems status monitoring and assessment technologies, to realize real-time conditions of aircraft components. While most of these automatic systems are not well defined, the goal is to use real-time flight data to detect system flaws, defects, or abnormal operating conditions early enough to allow timely intervention.

4) The key thing to remember is that these new maintenance management systems are part of the continuing evolution of maintenance. They should be characterized as a new and different way of doing maintenance, not a means of eliminating maintenance. As maintenance is still being accomplished, these systems do not eliminate maintenance actions. They may, however, eliminate some scheduled maintenance activities.

5) Contact the Aircraft Maintenance Division (AFS-300) for specific guidance before you authorize an air carrier to use an automatic data collection system or automatic Aircraft Systems Health Monitoring and Management System.

C. Operational Data Procedures.

1) The operator should have written procedures to guide its operational data collection process. CASS procedures should include a risk-based methodology for determining the type and frequency of operational data collection so that resources focus on the most revealing data, with regard to maintenance program effectiveness. An air carrier CASS should include clear procedures for determining:

- What operational data to collect;
- Who will collect it;
- How to collect it;
- When to collect it; and
- What to do with it.

2) Operational data can be divided into routine or nonroutine data collection and analysis. The routine data element uses a proactive data collection and analysis process that seeks to identify indicators of maintenance program ineffectiveness before they can progress to a functional failure that results in a reduction in aircraft availability. Some examples are:

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- Aircraft logbook information detailing unscheduled maintenance, including maintenance deferred in accordance with the MEL/Configuration Deviation List (CDL);
- "Chronic" aircraft systems that have repeat write-ups within a specified time period (e.g., 10 to 15 days);
- Corrosion prevention and control program findings;
- Engine condition trend monitoring data;
- Individual item failure rates; and
- Mechanical Reliability Reports (MRR), Mechanical Interruption Summaries (MIS), and similar data.

3) The nonroutine operational data element is a reactive data collection and analysis process that seeks to identify indicators of maintenance program ineffectiveness after an undesirable event has occurred. Some examples are:

- Accidents and incidents;
- In-flight engine and propeller separations and uncontained engine failures;
- In-flight engine shutdowns;
- High-load events;
- Flight delays and cancellations related to mechanical issues;
- Rejected takeoffs;
- Unscheduled parts replacement or unscheduled maintenance;
- Unscheduled landings due to mechanical issues;
- Lightning strikes; and
- Hard landings.

4) As with reactive audit surveillance, a CASS generally approaches problems from the analytical, systems perspective. For example, in response to one or more rejected takeoffs, a CASS might focus the operational data collection and analysis to determine if a pattern in rejected takeoffs was evident, or a CASS might examine other types of data in relation to the rejected takeoff situation.

5) The above data sets are presented only as examples. Although the data sets are oriented toward equipment, this area of a CASS may also collect other types of data, such as information on the different types of maintenance errors experienced by the operator.

6) The operator's CASS documentation should include a means of identifying data that is relevant and useful for that operator to use in monitoring the effectiveness of its specific maintenance program. The operator should periodically review and reevaluate the usefulness of the data it collects and analyzes to accomplish this portion of the CASS.

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D. Analysis of Operational Data.

1) Provide analysts with an understanding of the potential significance of each data set and how to process the data to understand its significance. This may require statistical analysis to compare the frequency of certain events, equipment failures with a determined norm, or qualitative analysis to evaluate reports of certain types of events.

NOTE: This process is not necessarily the same as what would be used in an FAA-approved reliability program.

2) Emphasize that the analysis of operational data should consider root causes of negative trends or anomalies. This preliminary RCA, including human factors, may require collaboration with technical personnel in the affected areas, specialists in engineering and reliability departments, or the OEM.

3) Delineate the roles of the CASS analysts as well as other departments or personnel in the analysis of operational data.

4) Some operators select a system that uses alerts or warnings if results of the analysis exceed certain predetermined parameters. A CASS should not rely completely on such alerts to the exclusion of analysts' judgment. The FAA's expectation of a CASS in this regard is that the operator has a complete, written procedure to review and analyze the operational data collected and to determine when further review is necessary.

5) While the surveillance and analysis steps differ for the verification of the performance of the maintenance program versus verification of the effectiveness of the program, the process merges when responding to CASS findings and providing a corrective action, as necessary.

6) Results from the two requirements of CASS (performance and effectiveness) identify potential deficiencies (hazards) in the maintenance program. In responding to these findings and analyses, the objective of a CASS is to determine the root causes of program deficiencies and address them appropriately, regardless of the perspective from which the deficiencies are found. Note that the discussion is focused on a CASS function, not an organization. For a given operator, that function might be performed by more than one organization.

7) Generally, the area responsible for surveillance will present their results to the technical or production area of the operator with a preliminary analysis of the collected information and, in some cases, possible underlying causes of the problem. Personnel in technical or production areas usually complete the RCA and develop proposed corrective action alternatives.

3-3901 VERIFY THE CASS FUNCTIONS CONCERNING THE CORRECTIVE ACTION PROCESS. A corrective action process is the process of interdependent activities that traces the symptom(s) of a problem to its cause, produces solutions in a timely manner for preventing the recurrence of the problem, and implements the changes. The activities within the corrective action process are:

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- RCA;
- Development of corrective action;
- Implementation of corrective action; and
- Monitoring a corrective action.

A. RCA.

1) RCA applies to both audit findings and analysis of results and trends in the operational data. For example, either audits or operational data analysis may point to maintenance errors caused by inadequate training. Analysis should not stop with simply determining which mechanics received inadequate training and then retraining the mechanics. Rather, the analysis should determine why the training breach occurred and consider areas in management, communications, scheduling, or training program design that may be involved.

2) The key is to have a CASS structure that addresses the basic disciplines and elements involved in finding and correcting program deficiencies. The CASS procedures should note that in performing an RCA, all relevant areas should be considered, including the role of senior management in setting appropriate policies, procedures, and an environment of communication.

3) Following a systems approach, an RCA treats errors as defects in the system rather than in an individual. RCA looks beyond the symptom to find the organizational defect that permitted an error to occur, to correct the fundamental problem, and to prevent recurrence. The more thorough the analysis, the greater the likelihood that the operator will uncover why the system deficiency occurred and how the organization can respond definitively.

4) The process starts during the audit itself, because auditors must collect information conducive to later analysis. If a CASS is to uncover a procedural weakness, for example, information about the procedure must be collected. This should be factual and objective information, not a premature judgment about the root cause. RCA is a key to any complete CASS, even though procedures may vary in complexity from operator to operator.

5) Regarding the thoroughness of the analysis, the principles and considerations of an RCA are closely related to those of risk assessment. Both processes do not simply consider the person involved in an issue (e.g., the mechanic made a mistake) but all aspects of the organization within which that person works. This approach includes the premise that human error is a consequence of the system rather than a deliberate action of an individual and that proactive measures and continuous reform of different aspects of the processes and organization can address latent conditions in the system and increase the system's resistance to operational hazards. The term "latent condition" refers to flawed procedures or organizational characteristics that are capable of creating hazards if the right conditions or actions occur.

6) Ensure that the operator's procedures or corporate culture do not advocate the blame culture. The blame culture can have a significant negative effect on safe operations. Terminating the individual who has the blame assigned is usually not consistent with an effective RCA.

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a) Operators that adopt the blame culture:

- Fix the blame and move on;
- Focus on the individual(s) who made the error;
- Stop short of identifying systemic problems and root causes;
- Never fix the problem; and
- Allow mishaps/mistakes to recur.

b) Written CASS procedures for an RCA should address the following questions:

- Do documented procedures lay out when the RCA process will be used?
- What events would trigger the RCA process?
- Do procedures describe who will perform an RCA?
- Are CASS auditors and other CASS personnel trained in RCA?
- Are personnel who are developing a corrective action trained in RCA?
- Do the personnel performing an RCA have a direct knowledge of the process deficiency?
- Are there procedures specific to how an RCA will apply equally to the performance and effectiveness of CASS?
- Does management "support" RCA?
- How does an RCA address findings from outside sources?

B. Areas of Emphasis for an RCA.

1) Systems analysis plays an increasingly important role in a CASS because of the increasing complexity and variety of operations, equipment, and organizations. Systems analysis emphasizes a coordinated approach to an enterprise in terms of integrated networks of people and other resources performing activities that accomplish some mission or goal in a prescribed environment.

2) Focusing on a systems approach for identifying why a deficiency occurred, personnel working on the proposed corrective action(s) should ensure that they evaluate the characteristics within the design of a process. This approach recognizes the wide range of interrelated issues that may be associated with a problem in the system, such as management policies, communications, and pilot technique, in addition to the maintenance activities themselves.

3) Human factors analysis looks at how humans communicate and perform in the work environment and then seeks to incorporate that knowledge into the design of equipment, processes, and organizations. This enhances safety and maximizes the human contribution, partly by designing systems to anticipate the inevitability of human error. Human factors that audit checklists can address include basic issues, such as whether there is adequate lighting for mechanics and inspectors to perform their work and whether schedules permit personnel to get proper rest. But the discipline addresses a wider range of issues affecting how people interface with technology and the operational system, including:

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- Human physiology;
- How people learn and perceive;
- Equipment, technology, and documentation; and
- Workplace.

4) Knowledge gained from human factors analysis can:

- Help avoid maintenance errors;
- Ensure that personnel skill sets match task requirements;
- Ensure that skill sets are maintained and improved; and
- Enhance the work environment.

a) This knowledge can help CASS analysts perform an RCA.

b) Continuing with the previous example of inadequate training, with insufficient awareness of human factors issues, operators may trace a maintenance error to a mechanic or technician who appears to have received insufficient training for the task and determine that the solution is more technical training. However, further analysis may reveal that there are contributing flaws in equipment design, job cards, manuals, the work environment, or organizational procedures, such as shift turnover, that more training will not satisfactorily overcome. Or, it may turn out that a different kind of training, perhaps involving decisionmaking skills, is called for.

5) As of this writing, the FAA is deeply involved in cooperative efforts with industry and academia in promoting human factors in aviation. This field is rapidly evolving, particularly in its application to aviation maintenance. According to a study conducted for the FAA, which cited Boeing research, maintenance error contributes to a significant portion of air carrier accidents, with shift-turnover errors and work interruptions standing out as leading underlying causes. Based on the growing importance of human factors and information available to industry, the FAA expects that operators will apply concepts of human factors to their CASS surveillance and analysis.

6) CASS surveillance also should ensure that an RCA considers human factors. Those personnel designated to respond to events such as rejected takeoffs should also include human factors as part of their investigation of individual events. Otherwise, data reviewed in a CASS may be incomplete.

7) One challenge presented by the increasing emphasis on human factors is how to balance two seemingly contradictory purposes. On the one hand, the FAA and industry need to encourage personnel to cooperate in addressing system organization and design issues without inhibitions caused by fear of discipline or enforcement. On the other hand, in some cases, individual employees or the operator may bear a degree of culpability (e.g., deliberately bypassing important controls or committing a serious regulatory infraction in the commission of a maintenance error).

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a) In some rare instances, personnel may receive disciplinary action or even FAA administrative or legal enforcement if the action was deliberate and not a result of corporate culture. In any case, a CASS should accomplish an RCA.

b) In any event, the specific concern of a CASS is identifying and correcting deficiencies in the maintenance program, not assigning blame to any individual or individuals. A CASS should identify and correct deficiencies in the maintenance program, rather than resolve specific events, even if CASS analysts have the task of researching specific events.

C. Analytical Tools and Processes. While it is not a requirement for an operator to implement any specific externally developed system, analytical tools or processes are available to assist in the analysis process. In view of the continuing evolution of this process, as of this writing, some examples of these tools are listed below.

1) The Maintenance Error Decision Aid (MEDA) tool was developed by the Boeing Human Factors Engineering group in collaboration with the FAA, airlines, and the International Association of Machinists for analyzing human performance issues related to maintenance errors and trends. Operators use MEDA to track events, investigate and prevent maintenance errors, and identify contributing factors, corrective actions, and prevention strategies. A software analysis package has been developed to work with this aid and facilitate analysis of systemic issues.

2) The University of Manchester developed the Managing Engineering Safety Health tool in collaboration with British Airways Engineering. The focus of this system is researching the workplace and organizational environment in aircraft maintenance to find the issues with the greatest potential to contribute to human factors problems. The system uses software, diagnostic, and sampling tools. Managing Engineering Safety Health conducts anonymous survey-like assessments among personnel at the work location. This is a more structured, data-intensive approach toward determining and monitoring personnel attitudes toward the system than the interview process discussed earlier. The industry has far less practical experience with Managing Engineering Safety Health than with MEDA.

3) The Human Factors Accident Classification System Maintenance Extension tool was developed by the U.S. Naval Safety Center in collaboration with the FAA for use in the air carrier industry as well as naval aviation. This comprehensive system incorporates a number of analytical tools and has profiled maintenance errors and contributing conditions, permitting development of potential prevention measures. While the Human Factors Accident Classification System Maintenance Extension may be more sophisticated than many operators would need, it demonstrates principles and techniques of software-aided analysis that operators could apply to a CASS.

D. Developing and Implementing a CAP.

1) Development. After the assessment of risk and completion of an RCA, a final decision can be made on a proposed CAP. As directed by written procedures, the CAP should address the root cause of the deficiency and provide a means of verifying that the corrective action fixed the problem.

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a) Responsibility/Authority.

1. A CASS should designate the position or organization responsible for evaluating and approving proposed corrective actions as well as the parties responsible for implementing, monitoring, and ensuring that all affected parties receive notification, both within the company and externally, if necessary.

2. The CASS director or other designated manager may appoint a corrective action team to design and propose a corrective action. The team, which typically represents a cross section of the departments involved in audits, operational data collection, analysis, and production, oversees the implementation of the corrective action.

3. Technical and reliability control boards are most often used in conjunction with FAA-approved reliability programs; however, a similar concept applies to a CASS, even if no FAA-approved reliability program exists.

4. The danger exists that one individual might be assigned to develop an entire CAP for which they have relatively little or no control (authority) to implement, and is a discrepancy in itself and must be fully addressed before any corrective action is assigned. Ultimately, the direct responsibility must always remain with the department required to address the discrepancy.

5. For example, a corrective action may require a revision to a manual. The department (inspection) that is responsible for the CAP might require the assistance of another department (technical publications) to publish the revision. Consequently, the department that is able to publish the manual would now be responsible (secondary) for publishing the manual.

6. It would be acceptable for auditors to help guide the responsible persons through the corrective action process. However, the auditors must remain independent from the corrective actions they may subsequently audit. The roles of auditors, analysts, managers, and committees should be clear when implementing the CAP.

7. The appropriate authority must accompany the responsibility if the process is to be effective. CASS procedures should address:

- Who has received the authority to develop the CAP?
- Who will be responsible to develop the CAP?
- Who is responsible to approve the CAP?
- Does the air carrier maintain the appropriate role of auditors in developing a CAP?

b) Duties.

1. The CASS procedures should identify how this plan will receive approval and at what level of the company. The CAP should address all relevant issues, including a timetable for completion of the action with milestones, if appropriate. The appropriate technical department (and other departments, such as flight operations, if the corrective action goes beyond the inspection and maintenance organizations) should then implement the plan.

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2. While developing a corrective action, consideration should be made for determining the effectiveness of the corrective action. The corrective action should address what exactly would determine the effectiveness of the corrective action during the followup process. Being that the corrective action is developed to address the causal factor(s), the determination of the effectiveness should be based on what measure(s) would be used to validate the effectiveness.

3. For example, if the deficiency involved the installation of incorrect fasteners and the root cause was determined to be the lack of training, the future followup would evaluate the effectiveness of any training that might have been implemented as it relates to the deficiency. Are the incorrect fasteners being installed after training has been accomplished?

c) CASS procedures should specify that personnel will analyze a corrective action proposal carefully before its selection and implementation to ensure that corrective action is necessary and will actually fix the problem and not lead to unintended negative consequences.

1. Air carrier procedures should instruct both the CASS and technical area personnel of the need to consider the impact of the proposed corrective action on other aspects of the operation. This includes other areas of the maintenance program, such as manuals. The corrective action may require coordination with other areas, such as flight operations, that might be affected.

2. A CASS should provide written procedures for the development of a CAP that addresses:

- When a CAP will be developed, based on risk assessment;
- How to develop a corrective action proposal with the focus being on addressing the root cause, as necessary;
- Documentation of timelines for accomplishment of tasks within the CAP;
- How will the plan be approved;
- The recordkeeping and documentation requirements of the CAP;
- How risk assessment and/or systems analysis will be used to guard against unintended consequences; and
- How the effectiveness will be determined during the followup process (as necessary).

3. In some cases, the operator may require data or assistance from a manufacturer to help correct a deficiency detected by the CASS. The operator should offer guidance in its CASS procedures, based on its particular experience, on how CASS and other personnel should address the need for assistance or information from manufacturers, and how to proceed in case of unsatisfactory or slow responses. This may include developing a standardized letter citing the need for this information or assistance to satisfy the requirements of § 121.373, § 135.431, or other pertinent regulations. It may also include working with the FAA principal inspector (PI) to find solutions.

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2) Implement the CAP. After development of a CAP, the responsible individual(s) must implement the plan. The importance of actually implementing the plan cannot be overstated. The completion of the corrective action must occur so that the discrepancy is addressed and the necessary followup surveillance can occur so that the effectiveness of the corrective action can be determined.

a) Responsibility/Authority.

1. The danger exists that one individual might be assigned to implement an entire CAP for which they have relatively little or no control (authority) to implement, and is a discrepancy in itself and must be fully addressed before any corrective action is assigned. Ultimately, the direct responsibility must always remain with the department that is required to address the discrepancy.

2. For example, a corrective action may require a revision to a manual. The department (inspection) that is responsible for the CAP might require assistance from another department (technical publications) to publish the revision. Consequently, the department that is able to publish the manual would now be responsible (secondary) for publishing the manual.

3. In the event that a CAP requires changes, procedures should assign authority to specific individuals to enable them to make changes to the plan.

4. It would be acceptable for auditors to help guide the responsible persons through the corrective action process. However, the auditors must remain independent from the corrective actions that they may subsequently audit.

5. The roles of auditors, analysts, managers, and committees should be clearly defined when implementing the CAP.

6. The appropriate authority must accompany the responsibility if the process is to be effective. CASS procedures should address the following questions:

- Who will be responsible for implementing the CAP?
- Who is responsible for making changes to the CAP?
- Who will determine when the CAP has been completed?
- Does the air carrier maintain the appropriate role of auditor when implementing a CAP?

b) Duties. Accomplishment of these duties is essential to the success of a CAP.

1. CASS procedures should ensure that the corrective action is implemented. Procedures should specify how to implement the plan from the time of development to closure.

2. The CAP should be specific as to what is expected to occur or to be accomplished. Clear timelines should document the completion of specific actions within the plan. For example, a CAP might have numerous actions that must occur in order to complete the plan, perhaps in a sequential order.

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3. It is essential that communication exist throughout the corrective action process. Procedures should include guidelines for how the technical area will communicate the status of the corrective action to the person responsible for monitoring implementation. Also, procedures should provide all parties involved with what will constitute a closure of individual action items within the plan and/or the plan in whole.

4. The procedures for auditors, analysts, managers, and committees should be clearly established if the process is to be effective. CASS procedures should address the following questions:

- How will the implementation of a CAP be accomplished?
- How will changes to the documented plan and/or timeline be addressed?
- When will individual action items within the CAP and/or entire CAP be considered "closed"?

3) Monitoring the CAP.

a) Under the CASS, monitoring of the CAP should be a documented and systematic approach towards ensuring the implementation of the documented CAP. Without documented procedures for monitoring the CAP, the possibility exists that corrective action will not be implemented.

b) Furthermore, if a corrective action was developed to mitigate or eliminate causal factors and was not implemented, the effectiveness of the corrective action could not be measured and the causal factors would still exist. CASS procedures should ensure that the corrective action was completed.

c) Responsibility/Authority.

1. An identifiable individual or entity (such as a CASS board) should be given the overall responsibility and authority for monitoring the status of the CAP. CASS auditors or analysts may have the direct responsibility of ensuring that the corrective action has been completely implemented in accordance with the established timetable or, if not, determining why the timetable has changed.

2. Responsibilities should include determining if any changes in the corrective action are acceptable, as well as who will make the determination for plan closure.

3. The roles of auditors, analysts, managers, and committees should be clear when monitoring the CAP. The appropriate authority must accompany the responsibility if the process is to be effective.

4. CASS procedures should address:

- Who will monitor the status of the CAP?
- Who will approve changes to the CAP?
- Who will determine when the CAP has been completed?

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d) Duties. The following procedures are essential to the success of the corrective action:

1. CASS procedures should ensure that the corrective action was completed. Therefore, procedures should specify how the plan will be monitored from the time of implementation to closure.

2. The means for tracking the corrective action against a timeline will vary between operators, and methods are normally dependant on the policies of the operator. Monitoring the plan may be accomplished through the use of electronic media and/or paper media. Procedures should identify what method or methods will be used to monitor the implementation of the CAP.

3. Effective communication must exist between the owner of a CAP and the individual who is monitoring the plan. Procedures should include clear guidelines for communicating the status of the corrective action from the affected technical area to the individual responsible for monitoring implementation. Also, procedures should provide all parties involved with a clear performance standard for closure of individual action items within the plan and/or the plan as a whole.

4. Auditors, analysts, managers, and committees must have clearly established procedures if the monitoring process is to be effective. CASS procedures should address the following questions:

- How will the CAP be tracked (monitored) in accordance with the timeline?
- How will automation or computerized systems be used to monitor the implementation?
- How will changes to the documented plan and/or timeline be addressed?
- When will individual action items within the CAP and/or entire CAP be considered “closed?”

E. Verify the CASS Functions Concerning the Followup Process.

1) At the beginning of the corrective action process, a risk-based determination was made to mitigate or eliminate the associated risk. This determination led to the development and implementation of a CAP (risk control).

2) When a CAP included an RCA, the primary goal of the CAP would have been to prevent recurrence of the discrepancy. To be effective, the plan would have specifically addressed the identified causal factor(s).

3) Additional surveillance or data collection may be necessary to validate the effectiveness of the CAP. The followup surveillance plan is the means by which the effectiveness is validated and has two principles: verifying the effectiveness of the CAP and additional surveillance planning (auditing and/or data collection).

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a) Responsibility/Authority.

1. An identifiable individual or entity (such as a quality organization) should be given the responsibility and authority for performing the followup of the CAP. CASS auditors or analysts may have the responsibility for making a determination of the effectiveness of the CAP and may sometimes determine that the corrective action was not effective and requires additional action(s).

2. The roles of auditors, analysts, managers, and committees should be clearly defined in the CAP process as well as the additional surveillance planning process. The appropriate authority must always accompany the responsibility if the process is to be effective.

3. CASS procedures should address the following questions:

- Who will validate that the CAP was effective?
- Who will approve changes to the surveillance planning or immediate actions?

b) Duties.

1. Performance measures to evaluate the effectiveness of the corrective action should be specific. The performance measures should have been established during the development of the CAP and should provide the information necessary to determine the level of action plan effectiveness.

2. Verifying the CAP effectiveness may require a one-time audit or could require a series of frequent audits. CASS procedures should include how to determine the level of followup audits for verifying corrective action implementation. For example, based on the risk assessment or complexity of the corrective action, the designated CASS analyst or team may schedule special, less frequent, or more frequent audits.

3. They may also change the data collection process or institute other means of verification. The FAA expects the operator to have a well-designed and logical process to design the followup actions.

4. The accomplishment of the followup process should be verifiable. The operator should document the outcome of the process. This documentation should provide enough information to be able to conclude that the process has been accomplished.

5. The procedures for auditors, analysts, managers, and committees should be clear if the process is to be effective. The methodology will probably vary from one operator to another, but the principles should be evident and verifiable in written procedures.

6. CASS procedures should address:

- What measures will be used to evaluate the effectiveness of the corrective action, including identification of data to be collected,

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awareness of the possibility of unintended consequences, and events that should trigger a response;

- When and/or how often the followup will occur;
- How to use the automation or computerized systems to document the followup process; and
- How to determine changes to surveillance planning and/or data collection.

F. Analyze Results. Upon completion of the review/surveillance, analyze the results and determine if the operator/applicant's CASS meets all of the requirements. If there are deficiencies, initiate collaborative discussions with the operator/applicant to resolve the issues.

3-3902 TASK OUTCOMES.

A. Complete the PTRS Record (if applicable).

B. Complete the Task. Complete ATOS SAI or EPI DCT, as appropriate, for the CASS Element 1.3.11. Successful completion of this task will result in the acceptance of the CASS program or revision and/or a determination that the CASS is being performed properly and is producing the desired results.

C. Document the Task. File all supporting paperwork in the operator/applicant's office file.

3-3903 FUTURE ACTIVITIES. Normal surveillance.

RESERVED. Paragraphs 3-3904 through 3-3915.

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VOLUME 3 GENERAL TECHNICAL ADMINISTRATION

CHAPTER 52 PART 137 AGRICULTURAL AIRCRAFT OPERATIONS

Section 1 Introduction to Part 137 Related Tasks

3-4226 AGRICULTURAL AIRCRAFT OPERATIONS. Title 14 of the Code of Federal Regulations (14 CFR) part 137 is applicable to all operators conducting agricultural aircraft operations. The definition of the term agricultural aircraft operation in part 137, § 137.3 includes forest fire-fighting activities, e.g., fire bombers, or tankers. Anyone conducting such activities is required to have an Agricultural Aircraft Operator Certificate. The exceptions are agricultural operations by public aircraft and certificated external-load operators dispensing only water.

A. Public Aircraft Operations. Public aircraft operations are those where the aircraft and operation are generally exempt from compliance with Code of Federal Regulations. It can further be said that the flight needs to undertake an inherently governmental function that is so intimately related to the public interest as to mandate performance by the government and require either the exercise of discretion in applying government authority or the use of value judgment in making decisions for the government; or to undertake other governmental functions, but only when needed to respond to an imminent threat to life, property or natural resources, and no service by a private operator is reasonably available to meet the threat.

B. Government Operations. When operated by a government for a governmental function, the flight needs to be mandated by law or otherwise taken by a government for reasons such as national defense, intelligence missions, search and rescue, law enforcement (including transport of prisoners, detainees, and illegal aliens), security operations, firefighting, natural resource and disaster management, transport of mission-related cargo, equipment development and demonstration, employee or contractor training, and space, aeronautical, atmospheric, geographic, or oceanographic research.

3-4227 WEB-BASED OPERATIONS SAFETY SYSTEM (WebOPSS). Aviation safety inspectors (ASI) must use the WebOPSS to issue part 137 authorizations to agricultural aircraft operators. These authorizations should be issued during initial certification and modified when an operator requests a change or a change is directed by headquarters (HQ). There is no requirement for part 137 operators to hold digital signature capability. The principal operations inspector (POI) must digitally sign the WebOPSS authorizations and then request the operator's signature. It is acceptable to send or receive these authorizations by fax or email for operator's signature. If an operator has not signed the authorization it is still valid once issued by the POI.

NOTE: 14 CFR part 137 WebOPSS authorizations are not subject to the requirements of 14 CFR part 119 for operations specifications (OpSpec). ASIs should refer to these paragraphs as "part 137 authorizations," not OpSpecs. This also applies to approvals of Congested Area Plans with authorization A503.

3-4228 PUBLIC EMERGENCIES. Part 137, § 137.1(b) allows certificated agricultural operators to deviate from part 137 for relief and welfare activities during public emergencies.

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A. Definition of Public Emergency. The term public emergency as used in part 137 means an emergency requiring relief in the public interest. The emergency is of such magnitude that if immediate action were not taken, life, property, or the economic welfare of a substantial portion of a population or a significant geographic area would be jeopardized by the circumstances of that emergency. The determination of a public emergency is made by an agency of the United States, a state, or local government. An example would be spraying to eradicate mosquitoes to control the spread of the West Nile Virus. Any situation which is solely a matter of convenience or economic advantage to the operator is not deemed to be a public emergency.

B. Deviation from Part 137 in Event of Public Emergency. An operator that deviates from part 137 shall complete the report required by § 137.1(c) within 10 days and submit it to their nearest Flight Standard District Office (FSDO).

3-4229 DEFINITION OF AGRICULTURAL AIRCRAFT OPERATION. An agricultural aircraft operation means the operation of an aircraft for the purpose of dispensing any economic poison; dispensing any other substance intended for plant nourishment, soil treatment, propagation of plant life, or pest control; or engaging in dispensing activities directly affecting agriculture, horticulture, or forest preservation, but not including the dispensing of live insects.

A. Economic Poisons. An economic poison is any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any insects, rodents, nematodes, fungi, weeds, viruses, other forms of plant or animal life, and anything declared by the Secretary of Agriculture to be a pest. Viruses on or in living man or other animals are excepted. Also, an economic poison is any substance or mixture of substances intended for use as a plant regulator, defoliant, or desiccant.

B. Dispensing Live Insects and Other Agricultural Activities. Section 137.3 excludes the dropping of live insects as a dispensing activity. The applicability of part 137 also permits persons other than part 137 certificate holders to conduct nondispensing type agricultural activities such as bird chasing and antifrost agitation, without an agricultural aircraft operator certificate. Regardless of whether nondispensing operations are conducted by a part 137 certificate holder or not, the operation must be in accordance with a waiver from the applicable provisions of 14 CFR part 91. If the operation will be over a congested area, the waiver provisions must provide a level of safety equivalent to that provided by a part 137 Congested Area Plan (see Volume 3, Chapter 52, Section 2, Evaluate a Part 137 Congested Area Operations Plan).

3-4230 MINIMUM EQUIPMENT LIST (MEL).

A. Generic Format. Most manufacturers of restricted category aircraft used in agricultural operations have not developed or requested approval for a Master Minimum Equipment List (MMEL). Operators of such aircraft are limited in the choice of documents for such aircraft; however, an operator of a small, single-engine turbine-powered agricultural aircraft may use the generic MMEL shown in the MMEL subsystem. Operators who wish to use this document will be required to develop a usable MEL for their own use based on the generic format, providing “M” and “O” items that they develop for their own operation.

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B. Letter of Authorization (LOA). No provisions are currently listed in part 137 for the use of an MEL by part 137 operators. Inspectors may follow the same MEL approval process for part 137 operators that is used for part 91 operations (i.e., approval of an MMEL for use as an MEL by means of a LOA). Approval will be granted by issuing template D095 from WebOPSS.

3-4231 PESTICIDE HOTLINE. The following hotlines are available for answering pesticide questions:

A. National Pesticide Telecommunications Network. The National Pesticide Telecommunications Network operates a toll-free hotline, 1-800-858-PEST (7378), staffed Monday through Friday, from 7:30 a.m. to 3:30 p.m., Pacific Time. Qualified personnel are available to answer questions about pesticides. Information can be obtained about treatment by a physician after contamination or suspected contamination. The location of the nearest poison control center, cleanup of a pesticide spill, and other related information is also available on the Internet at http://npic.orst.edu/index.html.

B. National Capital Poison Center. The National Capital Poison Center is an independent, private, not-for-profit organization affiliated with The George Washington University Medical Center. It is certified by the American Association of Poison Control Centers. Their 24-hour telephone guidance for poisoning emergencies is provided free of charge by Certified Specialists in Poison Information, with backup by board-certified physician toxicologists. The emergency telephone number is 1-800-222-1222. For non-emergency, general information, contact your local poison control center or visit http://www.poison.org.

C. Chemical Transportation Emergency Center (CHEMTREC). CHEMTREC offers 24 hours a day, 7 days a week emergency phone service. In the event of an incident or accident involving pesticides, CHEMTREC is able to provide emergency response information pertaining to chemical spills. In emergency situations, call (800) 424-9300. For non-emergency, general information or referrals, call (800) 262-8200. Non-emergency telephones are staffed from 8:30 a.m. to 5 p.m., Eastern Time, Monday through Friday. They also maintain a Web site at http://www.chemtrec.com.

3-4232 COORDINATION WITH OTHER AGENCIES. The application of economic poisons, either by surface vehicle or aerial applicator involves regulation by Federal, state, and local authorities. Some of these are listed below:

A. Federal Authority. At the Federal level, there are the United States Department of Agriculture (USDA) and the Environmental Protection Agency (EPA), and in cases involving national parks or preservations, the Department of Interior.

B. State Authority. Additionally, each state has requirements for the purchase, application, and disposal of chemicals used in agricultural operations. Each state has testing and licensing requirements that each pesticide applicator must complete before being allowed to operate within that state. This test may be administered by the state lead agency (usually the Agriculture Department).

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C. Inspector Concerns. Inspectors are primarily concerned with flight operations associated with the application of economic poisons. It is impractical for each inspector to become thoroughly familiar with all facets of agrichemical application and regulation.

1) Questions concerning the handling, mixing, application ratios, or expiration dates of specific chemicals should be addressed to the State agency governing these areas.

2) Federal Aviation Administration (FAA) inspectors should become familiar with the personnel or State agencies responsible for the regulation and oversight of the aerial application of chemicals. The expertise of these individuals and agencies can assist the inspector in the certification, inspection, and surveillance of agricultural aircraft operators.

3) All economic poisons must be identified and labeled. If an inspector encounters a chemical spill or economic poison during an accident investigation or an inspection, they can obtain important information from the container label, including recommended container disposal, name of the chemical company, etc. This may not be available at the accident site and coordination with the mixing and loading facility may be necessary.

3-4233 OPERATING RULES. While the operating rules for agricultural aircraft are specified in part 137 subpart C, the following are some additional considerations inspectors should consider:

A. Shoulder Harness. During inspection for initial certification and during site visits, the shoulder harness specified in part 137, § 137.31(b) should be inspected for proper installation, preferably by an Airworthiness inspector.

B. Violations of Part 137, §§ 137.37 and 137.39. In cases involving alleged violations of §§ 137.37 and 137.39, the inspector will seek the assistance of the state agriculture authority in establishing proof, such as residue testing, of such violation. The inspector may alternatively seek assistance from the county agent or equivalent representative of the USDA, or the EPA. In certain violation cases involving alleged injury or hazard to the health of persons, the inspector will request assistance from the proper authorities.

C. Personnel Duties and Responsibilities. Operators must inform flight and ground crewmembers of their duties when performing agricultural operations. A record of each crewmember's duty assignment, date of assignment or termination of duty, and a signed statement by the crewmember that they have been advised of their duties will show compliance with the requirements of part 137, § 137.41(a).

D. Proof of Property Interest. The private agricultural aircraft operator may be required to show the deed or agricultural use lease pertaining to the property where the application work is performed. (Refer to part 137, § 137.35(c).)

1) For the purposes of this 14 CFR, any property interest should be evidenced by a legal, written instrument.

2) The term "property interest in the crop" means bona fide legal interest, not one which was created for the purpose of avoiding the requirements of part 137. For example, a

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tenant farmer living on rented land, growing the crop and sharing the proceeds with the owner, would normally have a bona fide property interest in the crop.

E. Authorization from Air Traffic Control (ATC). Operators must have ATC authorization when conducting dispensing or other agricultural operations (not including flights to and from a dispensing area) within the lateral boundaries of a surface area of Class D airspace designated for an airport. Operators may contact the ATC facility by aircraft radio, in person, or by telephone for receipt of the authorization. If operating a restricted category aircraft near a busy airport where passenger transport operations are conducted, a waiver or special operating limitations issued by the Administrator may be required. (Refer to part 91, § 91.313(e).)

F. Deviation from Airport Traffic Patterns. Pilots of agricultural aircraft may deviate from airport traffic patterns with the authorization of the control tower. At airports without control towers, the pilot may deviate from the traffic pattern if:

1) Prior coordination is made with the airport management. Written confirmation is not required.

2) Deviations from the traffic pattern must be limited to agricultural aircraft operations.

3) Landings and takeoffs should be made from runways or other areas of the airport so designated by airport management.

4) The aircraft must at all times remain clear of and give way to aircraft conforming to the traffic pattern.

G. Minimum Safe Altitudes—Other Than Congested Areas. Part 137, § 137.49 permits operations at altitudes contrary to part 91, § 91.119, Minimum safe altitudes: General, provided such operations are conducted without creating a hazard to persons or property on the surface and are in conjunction with aerial application activities. However, flights between dispensing operations must comply with the provisions of § 91.119. For example, the pilot of an agricultural aircraft dispenses an economic poison on a field adjacent to a farmhouse. The pilot may operate less than 500 feet above the surface and closer than 500 feet to the house provided the house and its occupants are not exposed to undue hazards from the aircraft or the chemicals. However, when flying to the dispensing area or returning after application, the aircraft must maintain § 91.119 requirements.

H. Considerations for Congested Area Determination. The term congested area has been applied on a case-by-case basis since it was first used. No precise mathematical or geographic definition has been developed. However, some guidelines have been developed to assist in interpretation:

1) The purpose of the rule is to provide minimum safe altitudes for flight and to provide adequate protection to persons on the ground. In past cases the following areas were determined to be congested:

- Three houses near an intersection,

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- The campus of a university,
- A crowded beach area along a highway, and
- A boy's camp where numerous people were on the docks and the shore.

2) The presence of people is important to the determination of whether an area is "congested." A group of unoccupied buildings would not be considered a congested area.

3-4234 Lethal Dose $(LD)_{50}$ INDEX OF AGRICULTURAL CHEMICALS. Chemicals may be toxic if encountered in excess of normal amounts. Agricultural chemicals in common use may be toxic to humans as well as to the insects, animals, and plants being controlled. LD_{50} percent, commonly referred to as $LD_{50,}$ is the index that shows the comparative toxicity of the various chemicals and is available for the information and use of inspectors engaged in the certification and surveillance of agricultural aircraft operations. LD_{50} means a dose of substance that produces death in 50 percent of a population of experimental animals. It is usually expressed as milligrams per kilogram (mg/kg) of body weight. The higher the LD_{50} value, the lower the toxicity and the safer the chemical. For example, a chemical with an LD_{50} index of 15,000 is far less toxic than one with an index of 15.

A. Organic Phosphates. One group of chemical compounds in agricultural use is organic phosphates (sometimes called organophosphates), derived from phosphoric acid. Some examples are parathion, Phosdrin, and malathion. These are generally the most toxic of all pesticides and, therefore, pose the greatest hazard to those handling or dispensing them.

B. Cumulative Toxic Effects of Organic Phosphates. Nearly all pesticides can have a cumulative effect; that is, symptoms of poisoning occur gradually over a period of time and can be confused with symptoms of other illnesses.

3-4235 HAZARDOUS MATERIAL TRAINING. Common sense in the presence of agricultural chemicals is very important; therefore, inspectors should receive the following training before exposure to agricultural operators.

A. General Aviation (GA) Operations Indoctrination. This course deals, in part, with job functions which include agricultural certification areas and precautions concerning chemical toxicity.

B. Agricultural Aircraft Operator Certification and Surveillance (21609). This course provides instruction on the recognition of toxic chemicals, their labeling, and necessary precautions when performing job functions associated with agricultural operations.

C. Other Sources. Other FAA courses include information on hazardous material recognition and precautions. The current edition of FAA Order 8020.11, Aircraft Accident and Incident Notification, Investigation, and Reporting, contains considerable information of general use to FAA inspectors regarding hazardous materials. Also, most county agricultural commissions or similar state and local organizations offer "mini" courses on hazardous chemicals and precautions to be taken.

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3-4236 POSSIBLE HEALTH HAZARDS DURING AGRICULTURAL AIRCRAFT ACCIDENT INVESTIGATION. Inspectors are normally required to place aircraft accident investigation duties above all other job functions. Because of this priority, it is not uncommon for an inspector to depart for the scene of an accident immediately after notification. In most instances, this is normal and proper. However, when agricultural aircraft are involved, such action could prove to be dangerous.

A. Pre-Investigation Information. The inspector who departs for the scene of an agricultural aircraft accident without first finding out the nature of the pesticide, its hazards, and necessary precautions could be exposed to a serious health hazard. In this type of aircraft accident, a large amount of chemical may be concentrated in a small area, increasing the hazard to investigating inspectors.

B. Inspector Precautions. The following precautions are recommended regarding accident investigations which may involve agricultural materials.

1) Determine from the operator or persons for whom the operation was being conducted, the type, name, and EPA registration number of the material involved.

2) With the above information, call the nearest EPA office, poison control center, local agricultural commission officials, and/or the Pesticide Hotline to ask what precautions to take if an agricultural chemical is present. If advised to wear special gear such as protective clothing, goggles, gloves, breathing equipment, etc., ask how long it will take for the harmful characteristics of the material to dissipate.

3) Follow all instructions to the letter even if it means that the onscene investigation has to be postponed for several days.

4) If special protective gear or other precautions are needed, ensure that local law enforcement agencies are advised. Suggest that the scene of the accident be secured for the length of time special gear or precautions are needed.

C. Coordination with Law Enforcement Agencies (LEA). It is especially important that the inspector relay all the information received from EPA or a poison control center to the appropriate law enforcement agency. In most cases, law enforcement officers (LED) have already been at the accident scene and may need medical treatment.

3-4237 PROFESSIONAL AERIAL APPLICATION SUPPORT SYSTEM (PAASS). PAASS is a program conducted by the National Agricultural Aviation Research & Education Foundation (NAAREF) designed to increase aviation safety and mitigate drift incidents within the agricultural aviation industry through education and training. In addition to providing other education and training mediums, PAASS offers training programs held in conjunction with many of the state agricultural aviation association conventions throughout the country.

A. PAASS Information. For more information on the PAASS program, contact NAAREF at 1440 Duke Street, Alexandria, VA 22314, (202) 546-5722.

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B. Self-Regulated Application and Flight Efficiency (SAFE). Some regions are still holding programs and seminars for recurrent training, evaluating, and fine tuning procedures and techniques for controlling and mitigating spray drift. The program, known as SAFE, may be conducted by state organizations as well as the National Agricultural Aircraft Association (NAAA).

C. FAA Attendance. While no formal attendance at PAASS functions is required by FSDO inspectors, field personnel may find it helpful to visit these events when they are announced and held within the area of geographical responsibility of the FSDO. When flight operations are conducted at events organized by PAASS, waivers are not normally needed. In the past, during events attended by FAA representatives, no problems were observed with respect to maneuvering or non-participating aircraft. Operations at the clinics have been conducted in a highly organized and safe manner.

D. NAAA Handbook. NAAA publishes a handbook which outlines, in detail, the concept of Operation SAFE and how to organize and conduct a clinic. Copies of this handbook are available from NAAA, 1440 Duke Street, Alexandria, VA 22314, (202) 546-5722.

E. FAA Recommendations. Based on the experience gained in the initial sessions of Operation SAFE and PAASS, the following recommendations are provided:

1) No waiver is necessary for flight operations or maneuvers involved.

2) A Notice to Airman (NOTAM) may be necessary if the operations are conducted at a public-use airport. The wording should alert the transient pilot that "simulated agricultural dispensing operations are being conducting alongside runway [number]."

F. FAA Comments. FAA comments and recommendations regarding the conduct of Operation SAFE sessions, the contents of the NAAA handbook, or the PAASS program should be directed to FAA, Flight Standards Service, AFS-820, 800 Independence Ave., S.W., Washington, DC 20591.

3-4238 RENEWAL, AMENDMENT, AND CANCELLATION. An agricultural aircraft operator's certificate is effective until it is surrendered, suspended, or revoked. A lost or destroyed certificate may be replaced by the certificate-holding district office (CHDO) using the same information that was on the original certificate. The replacement certificate should have the word "duplicate" annotated on the front of the certificate. A copy of the duplicate certificate should be retained in the CHDO's files. In the case of a destroyed certificate, the operator should send any remains of the certificate to the POI with a written request that the certificate be replaced. The operator, or an agent for service authorized to act for the operator, must sign the request. The certificate will be signed by the district office manager.

A. Renewals. Not applicable to part 137 certificates.

B. Amendments. An agricultural aircraft operator may apply to amend the operating certificate.

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1) If an operator desires to have the prohibition against dispensing economic poisons added to or removed from the operating certificate, the operator should apply on FAA Form 8710-3, Agricultural Aircraft Operator Certificate Application, in the same manner as for an original certificate. The same procedure should be followed in applying for other changes on the Agricultural Aircraft Operator Certificate. Upon approval, an amended certificate will be prepared with the same certificate number and a new effective date. The amended certificate will be exchanged for the superseded certificate. The operator's enhanced Vital Information Database (eVID) file must be updated to reflect any new information that may be on the certificate. If the application for amendment is denied, the applicant shall be advised in writing of the reason for denial (Figure 3-143, Letter Advising Applicant of Reasons for Denying Amendments).

2) The FAA may also amend an agricultural aircraft operator's certificate as a result of actions taken under Title 49 of the United States Code (49 U.S.C.) and 14 CFR part 13.

3) If a certificate is amended due to an address change or a change in the CHDO, the date of original issuance is retained on the amended certificate

4) A change of the certificate holder's legal name requires the issuance of a new certificate and certificate number. This does not include a change to a doing business as (DBA) name.

C. Cancellation. The FAA may suspend or revoke an agricultural operator's certificate.

1) In the case of a voluntary surrender (e.g., when the operator decides to cease agricultural operations or to have the certificate held by the FAA pending enforcement proceedings), the operator must, as soon as possible, return the certificate by mail (registered preferred) or in person to the district office having jurisdiction over the certificate.

2) In the case of suspension or revocation of the certificate (e.g., as a result of an FAA enforcement action), the operator must, as soon as possible, return the certificate in a manner agreed to by the regional counsel.

3) If the operator fails to meet the certification requirements of part 137, § 137.19(d) (e.g., does not have at least one aircraft equipped for agricultural operations), the FAA may revoke or suspend the certificate until the operator meets certification requirements. Discretion must be allowed if the aircraft is temporarily out of service while undergoing maintenance, replacement, off season, etc. An "aircraft equipped for agricultural operations" may vary widely. An operator may have ten AT-802Fs configured for dispensing fire retardant and one C-150 used for directing the fire bombers and marking areas for them. If the operator sold all of the AT-802Fs and retained the C-150 for engaging in activities directly affecting forest preservation, they would still have one aircraft equipped for agricultural operations and should be allowed to continue holding the agricultural aircraft operator certificate as long as dispensing or non-dispensing operations are being conducted.

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Figure 3-143, Letter Advising Applicant of Reasons for Denying Amendments

[FAA Letterhead]

[Date]

[Operator’s name and address]

Dear [operator's name]:

We are returning your application for amendment of your commercial agricultural operator's certificate. Your request to add the dispensing of economic poisons is denied because your personnel, [personnel names], failed to meet the knowledge requirements of Title 14 of the Code of Federal Regulations (14 CFR) part 137, § 137.19 regarding economic poisons.

We will be happy to accept a new application and reexamine [personnel names] after these deficiencies have been corrected.
Sincerely,

[District Office Manager’s signature]

RESERVED. Paragraphs 3-4239 through 3-4255.

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VOLUME 3 GENERAL TECHNICAL ADMINISTRATION

CHAPTER 52 PART 137 AGRICULTURAL AIRCRAFT OPERATIONS

Section 2 Evaluate a Part 137 Congested Area Operations Plan

3-4256 PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) ACTIVITY CODE. 1332.

3-4257 OBJECTIVE. The objective of this task is to determine that a public aircraft or Title 14 of the Code of Federal Regulations (14 CFR) part 137 operator can conduct agricultural dispensing operations safely over a congested area, according to an approved plan. Successful completion of this task results in either approval or disapproval of an operator's proposed plan.

3-4258 GENERAL. Agricultural aircraft may operate over congested areas when:

- The local Flight Standards District Office (FSDO) has approved the congested area plan (CAP), and
- The appropriate official or governing body of the political subdivision over which the aircraft is to be operated has approved the operation in writing.

A. Appropriate Officials. An appropriate elected public official or governing body can include any of the following:

1) Mayor,

2) City Manager,

3) City Council,

4) County Board of Supervisors,

5) County Commissioner, or

6) Any other similar elected public official.

B. Public Notice. If time allows, the public notice required by part 137, § 137.51(b)(2) should be given at least 48 hours before dispensing operations begin. The form that the public notice takes is up to the operator. Newspaper ads, radio announcements, television announcements, or door-to-door handbills are all acceptable methods.

C. Contents of CAP. Consider the following when reviewing the plan of operation required by § 137.51(b)(3) and submitted by the operator.

1) The CAP must include an aerial photograph, large scale map, or computer-generated map or diagram of the area to be worked. Whichever depiction is used, it should be appropriately marked to show all obstructions which could be expected to present a

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hazard during the operation and the areas which could be used for an emergency landing and dumping of agricultural materials.

2) The photograph, map, or diagram must be current, preferably within the preceding 24 months, to be considered representative of the area. If current photographs or diagrams are not available, realtor's maps may be used to supplement. The important aspect is not to accept maps that are not drawn to scale. Maps should also be of sufficient detail to be useful in making a determination concerning the safety of the operation with regard to persons and property on the surface. Submissions that are of such a large scale that details of the area to be sprayed cannot be discerned should be discouraged.

D. Assisting Operators. Occasionally agricultural aircraft operators may request Federal Aviation Administration (FAA) assistance in determining whether an area is congested or not. Before the FAA can determine this, the site will have to be checked. The FAA cannot, of course, check every area an operator wants to service, but in some cases an operator needs legitimate assistance. The inspector must use judgment in determining the status of an area as congested or not. If the inspector has any doubt, he or she should consult with other inspectors or regional counsel for any precedent.

3-4259 SINGLE-ENGINE AIRCRAFT. When CAPs are conducted using single-engine aircraft, the inspector shall require the operator to arrange with appropriate officials of the area concerned to take such measures as are necessary to conduct the operation safely. These may include blocking off streets and other areas which could be used in an emergency landing or similar precautionary measures required in the interest of public safety. Before approving any operator's plan of operation, the inspector shall determine that the plan complies with the emergency landing requirements contained in § 137.51(b)(4)(iii).

3-4260 MULTI-ENGINE AIRCRAFT.

A. Takeoff Performance. If the operator intends to takeoff over a congested area, they must show in the CAP that the airplane can meet the accelerate-stop requirements of § 137.51(b)(5)(i). If the aircraft cannot meet these requirements, the operator must state in the written plan of operation that no takeoff will be made over a congested area during dispensing operations.

B. Critical Engine Inoperative. The operator must show in the CAP that the airplane can meet the climb requirements specified in § 137.51(b)(5)(ii).

3-4261 RESTRICTED CATEGORY AIRCRAFT. Title 14 CFR part 21, or the operating limitations established for the airplane, may not require a flight manual for restricted category aircraft. Therefore, performance information may be found in the applicable military technical order, operating limitations, placards, flight test performance data established by the aircraft manufacturer, or any combination thereof. In addition, performance information provided by a Designated Engineering Representative is satisfactory. If such performance information has not previously been established for the airplane to be used or, if any doubt exists concerning the authenticity of the information presented by the operator, a Manufacturing Inspection District

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Office (MIDO) should be contacted to arrange for an engineering flight test in order to obtain the required performance data.

A. Load Jettisoning. Aircraft, other than a helicopter, must be equipped with a device capable of jettisoning at least one-half of the aircraft's maximum authorized load of agricultural material within 45 seconds (part 137, § 137.53(c)(2)).

B. Data Not Determined. If such data have not been determined for the aircraft or, if any doubt exists concerning meeting this requirement, the inspector should have the operator conduct an in-flight load jettisoning demonstration.

C. Test Conditions. The aircraft must be loaded with any suitable material (lime, sand, water, etc.) and the demonstration shall be observed by the inspector from the ground. The discharge of material from the aircraft should be timed to determine compliance with the 45-second jettisoning requirement.

D. Preventing Inadvertent Jettisoning. Part 137, § 137.53(c)(2) requires that aircraft conducting agricultural operations over congested areas must have a means of preventing inadvertent jettisoning of the tank or hopper. This can be accomplished with a device such as:

1) Spring-loaded cover over a pull lever,

2) "T" handle or pull ring in a spring loaded shield,

3) A push-pull device fastened with frangible safety wire, or

4) Other equivalent devices.

3-4262 PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. This task requires knowledge of the regulatory requirements of part 137 and FAA policies and qualification as an aviation safety inspector (ASI).

B. Coordination. This task may require coordination with the airworthiness unit, the regional counsel, state, county, or local authorities.

3-4263 REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions):

- 14 CFR parts l, 61, 91, and 137, and
- Advisory Circular (AC) 137-l, Certificate Process for Agricultural Aircraft Operators.

B. Forms:

- FAA Form 1360-33, Record of Conference, Visit, or Telephone Call, and
- FAA Form 8000-36, Program Tracking and Reporting Subsystem Data Sheet.

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C. Job Aids. None.

3-4264 PROCEDURES. After a part 137 operator requests district office approval for a CAP, determine the need for a CAP based on location, type of operation, etc. (§ 137.51 (b)).

A. Plan Not Required. If a plan is not required, record discussion on FAA Form 1360-33 and place it in the operator's district office file. Do not open a PTRS file.

B. Plan Required. If a plan is required, the requirements of §§ 137.51 and 137.53 are as follows:

1) Instruct the operator to present the plan to the district office that has oversight authority where the operation will take place for review.

2) Remind the applicant of the requirement to coordinate with the appropriate state, local, or municipal authorities (§ 137.51(b)(1)).

3) Discuss with the applicant various methods of public notification, such as newspapers, radio, and handbills (§ 137.51(b)(2)).

C. PTRS. Open PTRS file.

D. Plan Requirements. Upon receipt of the operator's plan, the district office with oversight for the area where the activity will take place will ensure that the operator has included the following information:

1) A current aerial photograph, current map, or a recently drawn diagram of the area to be worked;

- Any representation must show all obstructions which may present hazards during operation.
- Potential areas for emergency landing or dumping of agricultural materials must also be indicated.

2) Altitudes to be maintained, approaches, departures, and turnaround considerations during operation.

3) Name and type of material to be dispensed;

4) Type of pest or work to be accomplished;

5) Dates and hours of dispensing operations;

6) Coordination with air traffic control.

7) Special operating procedures or limitations to ensure safe operations.

8) Method of public notification;

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9) An indication of coordination with the appropriate state, local, or municipal authorities (Figure 3-144, Sample Letters Indicating Coordination With Appropriate Authorities); and

10) Methods for complying with §§ 137.51(b)(4) and (5) and 137.53(c)(2).

- Arrangements for blocking off streets and other areas which may be used for emergency landings.
- Observe the load jettisoning demonstration from the ground if jettisoning test data is not available or in doubt. For multiengine aircraft, refer to § 137.51(b)(5).

11) Means for terminating the operation in the event it appears safety may be compromised or at the inspector's discretion.

E. Pilot Qualifications. The plan must indicate the qualifications (part 61 and § 137.53) of the pilot(s) to be used in the operation.

F. Aircraft Requirements. The plan must include information which indicates that the aircraft meets the requirements of part 91, and part 137, §§ 137.31, 137.33, 137.51, and 137.53.

G. Plan Approved (Local District Office when not the Certifcate-Holding District Office ((CHDO)). When the plan meets 14 CFR requirements, all safety considerations, and appropriate coordination requirements, a Memorandum (Figure 3-148, Memorandum Recommending Approval of a Congested Area Plan), stating that the local district office where the operation will occur has reviewed and approved the CAP as submitted and is recommending the approval and issuance of Web-based Operations Safety System (WebOPSS) paragraph A503. This memorandum should be sent, along with any submitted documentation required to meet the requirements listed in this paragraph to the principal operations inspector (POI) at the CHDO for final approval and issuance of WebOPSS paragraph A503.

H. Plan Approved (CHDO). When the plan meets 14 CFR requirements, all safety considerations, and appropriate coordination requirements, approve the plan using template A503 in WebOPSS. Each page of the plan is stamped "FAA-Approved," dated, and signed by the POI. If the approval is for Public Aircraft Operations, you do not need to issue paragraph A503 in WebOPSS.

1) Forward a copy of the approved plan to the operator.

2) Place a copy of the plan in the district office file on the operator.

I. Plan Not Approved. If the plan cannot be approved, issue a letter disapproving the CAP (Figure 3-146, Letter Disapproving Congested Area Plan).

J. PTRS. Make appropriate PTRS work entry.

3-4265 TASK OUTCOMES. Completion of this task results in either:

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- An approved CAP, or
- Issuance of a letter disapproving the CAP.

3-4266 FUTURE ACTIVITIES.

A. Monitoring.

1) Schedule monitoring of a CAP if the task is in work program plans.

2) Monitor the CAP (see Volume 6, Chapter 6, Section 4, Monitor a Part 137 Congested Area Operation).

B. Enforcement. Possible enforcement investigation if the operation is not conducted according to the approved plan or is unsatisfactory in any other manner. Use the approved plan as information for a subsequent enforcement investigation.

C. Review. Review of any subsequent congested area operations.

Figure 3-144, Sample Letters Indicating Coordination With Appropriate Authorities

(To Agricultural Aircraft Operator)

[Operator's name and address]

I, [name], the [title of individual and name of town] grant permission to [name of operator] to fly over the town of [name of town] for the purpose of [state purpose of operation] from an agricultural aircraft on [date of operation].

[official's signature]

(To Federal Aviation Administration)

[Operator's Letterhead]

[Date]

[Name and address of district office]

Sir/Ma'am:

[Name of operator] will conduct the dispensing operation, described on the attached diagram, per Title 14 of the Code of Federal Regulations part 137, § 137.51. The aircraft used will be a [make and model of aircraft and N number].

The dispensing operation will be conducted at no less than [altitude] feet above ground level.

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The airspeed will be [speed in knots or mph].

[Chemical name] will be dispensed at the rate of [number of gallons] per acre.

The operation will be conducted from [beginning date] to [ending date].

The public will be notified of the operation [indicate methods of notification] on [date].

Sincerely,

[Operator's signature]

Figure 3-145, Letter Approving Congested Area Plan. Use WebOPSS template A503.

Figure 3-146, Letter Disapproving Congested Area Plan

[FAA Letterhead]

[Date]

[Operator's name and address]

Dear [operator's name]:

This is to inform you that the congested area plan, which you submitted on [date], for agricultural aircraft operations over [congested area, city, or town] is not approved.

The following items were unsatisfactory:

[List the items and how they must be corrected.]

If you have any questions concerning this matter or intend to take action to correct these items, please contact this office at [telephone number].

Sincerely,

[POI's signature]

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Figure 3-148, Memorandum Recommending Approval of a Congested Area Plan

[FAA Letterhead]

[Date]

[To: Principal Operations Inspector]

[From: ASI conducting the local evaluation]

Subject: Congested Area Plan (CAP) Approval for Fly Low Aviation, Dallas

This office has approved the CAP submitted by Fly Low Aviation on February 22, 2012. This plan pertains to the aerial application of insecticides for the control of mosquitoes in Dallas, Texas. All requirements specified in Volume 3, Chapter 52, Section 2 have been met.

This office recommends approval and issuance of Web-based Operations Safety System (WebOPSS) paragraph A503.

Attachments:

Congested Area Plan

Letter of Authorization

Public Notice Form

Map of Area to be sprayed

14 CFR part 137 Operating Certificate

Copy of Exemptions (if required)

Performance charts for aircraft to be utilized.

Any additional information necessary for approval

RESERVED. Paragraphs 3-4267 through 3-4285.

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VOLUME 4 AIRCRAFT EQUIPMENT AND OPERATIONAL AUTHORIZATIONS

CHAPTER 4 MINIMUM EQUIPMENT LISTS (MEL) AND CONFIGURATION DEVIATION LISTS (CDL)

Section 2 Approve a Minimum Equipment List for a 14 CFR Part 91 Operator

4-656 PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) ACTIVITY CODES.

A. Initial Approval: 1425.

B. Revision: 1426.

4-657 OBJECTIVE. The objective of this task is to determine whether an operator meets the regulatory requirements for safe and appropriate flight, with certain instruments and equipment inoperative, under Title 14 of the Code of Federal Regulations (14 CFR) part 91. Successful completion of this task results in the issuance or denial of a letter of authorization (LOA) to operate under part 91 with a minimum equipment list (MEL).

4-658 GENERAL.

A. Authority. Part 91, § 91.213 authorizes flight with inoperative equipment under specific conditions.

B. Definitions.

1) Aircraft Evaluation Group (AEG). The Federal Aviation Administration (FAA) office responsible for the development and publication of an approved Master Minimum Equipment List (MMEL) for those aircraft within its area of responsibility.

2) Aircraft Flight Manual (AFM). The source document for operational limitations and performance for an aircraft. The term AFM can apply to either an Airplane Flight Manual or a Rotorcraft Flight Manual (RFM). The FAA requires an AFM for type certification. The responsible FAA Aircraft Certification Office (ACO) approves an AFM.

3) Aircraft Maintenance Manual (AMM). The source document for maintenance procedures for an aircraft. The term AMM can apply to either an airplane maintenance manual or a rotorcraft maintenance manual. The FAA requires the AMM for type certification.

4) Airworthiness Directive (AD). A mandatory airworthiness requirement for a particular make and model aircraft or installed equipment. An AD is supplementary to the aircraft's original airworthiness approval.

5) Airlines for America (A4A) Numbering System. Refers to systems on different aircraft in a standardized manner. MMELs use the A4A numbering system.

6) Calendar-Days. Includes all days, with no exclusion for weekends and holidays.

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7) Deactivation. To make a piece of equipment or an instrument unusable by the pilot/crew by preventing its operation.

8) Deferred Maintenance. The postponement of the repair or replacement of an item of equipment or an instrument.

9) Equipment List. An inventory of equipment installed by the manufacturer or operator on a particular aircraft.

10) Flight Operations Evaluation Board (FOEB). The FOEB is composed of FAA personnel who are operations, airworthiness, avionics, and aircraft certification specialists. The FOEB develops an MMEL for a particular aircraft type under the direction of the AEG.

11) Inoperative. A system and/or component malfunction to the extent that it does not accomplish its intended purpose and/or is not consistently functioning normally within approved operating limits or tolerances.

12) Kinds of Operations List (KOL). Specifies the kinds of operations (e.g., visual flight rules (VFR), instrument flight rules (IFR), day, or night) in which the aircraft can be operated. The KOL also indicates the installed equipment that may affect any operating limitation. Although the certification rules require this information, there is no standard format; consequently, the manufacturer may furnish it in various ways.

13) Letter of Authorization (LOA). Flight Standards District Office (FSDO) issues a LOA to an operator when the FSDO authorizes an operator to operate under the provisions of an MEL. Together, the LOA, the procedures document (see subparagraph 4-658B22), and the MMEL constitute a Supplemental Type Certificate (STC). The operator must carry the STC in the aircraft during its operation (see Figure 4-40, Preamble for Part 91 Operations). If applicable, issue the LOA (Figure 4-44) to the management company involved in fractional ownership arrangements. Each individual owner shall not be listed in the LOA.

14) Maintenance. The inspection, overhaul, repair, preservation, or replacement of parts. This definition excludes preventive maintenance (see subparagraph 4-658B21). After a mechanic performs other than preventive maintenance, a properly certificated maintenance person must approve the aircraft for return to service.

15) Master Minimum Equipment List (MMEL). An MMEL contains a list of items of equipment and instruments that may be inoperative on a specific type of aircraft (e.g., BE-200, Beechcraft model 200). It is also the basis for the development of an individual operator's MEL.

16) Minimum Equipment List (MEL). The MEL is the specific inoperative equipment document for a particular make and model aircraft by serial and registration numbers (e.g., BE-200, N12345). A part 91 MEL consists of the MMEL for a particular type aircraft, the preamble for part 91 operations, the procedures document, and an LOA. The FAA considers the MEL as an STC. As such, the MEL permits operation of the aircraft under specified conditions with certain equipment inoperative.

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17) Next Required Inspection. The inspection required under either an FAA-approved inspection program, a 100-hour inspection, or an annual inspection, as appropriate.

18) Operator. Refers to an individual or company (corporation, entity, etc.), and for purposes of this section refers only to part 91 operators.

19) Operations and Maintenance (O&M). O&M procedures in the MMEL refer to the specific maintenance procedures the operator uses to disable or render inoperative items of equipment and to specific operating conditions and limitations, as appropriate.

a) An O symbol in column 4 of the MMEL indicates that a specific operations procedure must be accomplished before or during operation with the listed item of equipment inoperative. Normally, the flightcrew accomplishes these procedures; however, other personnel, such as maintenance personnel, may be qualified and authorized to perform the procedure.

b) An M symbol in column 4 of the MMEL indicates that a specific maintenance procedure must be accomplished before beginning operation with the listed item of equipment inoperative. Normally, maintenance personnel accomplish these procedures; however, other personnel, such as the flightcrew, may be qualified and authorized to perform certain functions. Qualified maintenance personnel must perform procedures requiring specialized knowledge, skills, or the use of tools or test equipment.

20) Placard. A decal or label with letters at least ⅛ inch high. The operator or mechanic must place the placard on or near inoperative equipment or instruments so that it is visible to the pilot or flightcrew and alerts them to the inoperative equipment.

21) Preventive Maintenance. Refers to simple or minor preservation operations and/or the replacement of small standard parts not involving complex assembly. Title 14 CFR part 43 appendix A contains a list of preventive maintenance items. Qualified mechanics or certificated pilots may accomplish preventive maintenance and approve the aircraft for return to service.

22) Procedures Document. Pertains to a separate document containing the O&M procedures developed by the operator and any other operating information applicable to operation with an MEL, such as the as-required-by-14 CFR items that list the regulation by part and section or stipulate the operating conditions.

23) Proposed Master Minimum Equipment List (PMMEL). The PMMEL is the working document used as the basis for development of the MMEL. Normally, the manufacturer proposes it during the certification process. However, an operator of a unique type aircraft, for which an MMEL does not exist, may submit a PMMEL for FAA approval.

24) Return to Service. Return to service has two applications. An appropriately certificated person approves an aircraft for return to service after an inspection or after maintenance. A certificated pilot, in fact, returns the aircraft to service after the pilot conducts an appropriate preflight and accepts the aircraft for an intended flight.

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25) Small Aircraft. Aircraft with a maximum certificated takeoff weight of 12,500 pounds or less.

26) Supplemental Type Certificate (STC). A major change in type design not great enough to require a new application for a type certificate (TC) under 14 CFR part 21, § 21.19. An example would be installation of a powerplant different from what was included in the original TC.

27) Type Certificate Data Sheets (TCDS) and Specifications. A document issued by the FAA which describes the aircraft's airworthiness requirements relating to a specific type and make and model of aircraft. These documents are available at the FSDO.

4-659 BACKGROUND. Except as provided in § 91.213, all instruments and equipment installed on an aircraft must be operative before its operation. However, the FAA recognized that safe flight can be conducted under the MEL concept and under specific conditions with inoperative instruments and equipment.

A. Regulatory History. Until the most recent change to § 91.213, the MEL concept only applied to air carrier and commercial operations and General Aviation (GA) operators of multiengine aircraft for which the FAA had developed an MMEL. Operators of aircraft for which the FAA had not developed an MMEL had to comply with § 91.405. This section required that all aircraft discrepancies occurring between required inspections had to be repaired in accordance with part 43 before the aircraft could be operated. This meant that all the aircraft's instruments and equipment, regardless of whether they were essential or not to the flight operation conducted, had to be operative. Often, this requirement placed a burden on operators.

B. Amendments to Part 91. The FAA initiated several rulemaking projects to alleviate the regulatory burden of § 91.405 on part 91 operators. Before the issuance of a final rule change, the FAA encouraged public and industry participation, accepted and reviewed public comments, and conducted public hearings which were attended by other government agencies and the industry.

1) The FAA briefly suspended § 91.213 and allowed issuance of MELs by exemption. During this period the FAA gained valuable information on the usefulness and safety aspects of using MELs in GA.

2) Further, GA operators have a history of safe operations using § 91.205 as the sole reference for determining the instrument and equipment requirements for a particular flight.

3) However, operators indicated the need for relief from § 91.405. The FAA agreed that the regulation should reflect current operational practices. Consequently, the FAA amended parts 43 and 91 in December 1988.

C. Regulatory Requirements. The amendment to parts 43 and 91 provides a regulatory basis for the operation of aircraft with inoperative instruments and equipment. Operators conduct these operations within a framework of a controlled program of maintenance inspections, repairs, and parts replacement. However, operators must exercise good judgment and have, at each

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required inspection, any inoperative instrument or equipment repaired or inspected or the maintenance deferred, as appropriate.

4-660 APPLICABILITY. This section does not apply to operators holding certificates issued under 14 CFR parts 121, 125, 129, and 135. (For part 125 MELs, see Volume 4, Chapter 4, Section 3. For parts 121, 129, and 135, see Volume 4, Chapter 4, Section 7.) This section provides guidance for the operation of the following aircraft under part 91:

A. Aircraft for which No MMEL has been Developed.

1) Rotorcraft.

2) Nonturbine-powered airplanes.

3) Gliders.

4) Lighter-than-air aircraft.

B. Aircraft for which an MMEL has been Developed, but for which the FSDO has not Authorized Operation with an MEL.

1) Small rotorcraft.

2) Nonturbine-powered, small single-engine, and multiengine airplanes.

C. Other. This section applies to all other aircraft which have a part 91 MEL or for which an operator seeks MEL authorization under § 91.213.

D. Experimental Aircraft. An operator may operate an aircraft for which the FAA has issued an original experimental airworthiness certificate in accordance with § 91.213 only when authorized in that certificate's operating limitations.

E. Deviation Holders. Holders of Letters of Deviation Authority (LODA) from part 125 may apply for authorization to operate with a part 91 MEL.

4-661 MEL vs. § 91.213(d). Although the FAA amended part 91 to provide relief to operators under the MEL concept, some operators may find it less burdensome or less complicated to operate under the provisions of § 91.213(d). The inspector should discuss the requirements of each method with the applicant to help the applicant decide which method of compliance better suits the particular operation. Figure 4-41, Commonly Asked Questions about Minimum Equipment Lists, contains a list of commonly asked questions which may assist.

A. Listing of Equipment. An MEL is a precise listing of instruments and equipment and procedures that allow an aircraft to be operated under specific conditions with inoperative equipment. The MMEL, as part of the MEL, by nature does not cover equipment installed or modified under other STCs or field approvals. Any STC or other major modification may make the MMEL for a particular modified aircraft invalid.

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B. Regulatory Requirements. The regulations require that all equipment installed on an aircraft in compliance with the airworthiness standards and operating rules be operative. The FAA-approved MMEL includes those items of equipment and other items which the FAA finds may be inoperative and yet maintain an acceptable level of safety. The MMEL does not contain obviously required items such as wings, flaps, rudders, etc. When a part 91 operator uses an MMEL as an MEL, all instruments and equipment not covered in the MMEL must be operative at all times regardless of the operation conducted, unless:

1) They are newly installed and are not a safety of flight item such as a Traffic Alert and Collision Avoidance System (TCAS), an extra piece of navigational equipment, a wind shear detection device, a ground proximity warning system (GPWS), a radar altimeter, passenger convenience items, etc.

2) The operator has developed appropriate procedures for disabling or rendering them inoperative.

3) The operator has contacted the FSDO having oversight within 10 calendar-days following an installation and requested in writing that the equipment be added to the MMEL.

a) The operator must furnish the following information:

1. A copy of the STC or FAA Form 337, Major Repair and Alteration (Airframe, Powerplant, Propeller, or Appliance), that approved each equipment installation and the associated limitations listed in the AFM supplement or on FAA Form 337. The FOEB needs this information to account for installation differences as well as maintaining MMEL relief that is consistent with the limitations.

2. A system description that sufficiently details the interface of the equipment with the crew (location, controls, operation, how it is used, etc.).

3. A statement that describes the transfer of function when the equipment is inoperative (not required for the flight, as per crew procedures, because of alternate systems, etc.).

b) If the FAA determines that the equipment has been previously considered by the FOEB for inclusion in the MMEL and denied, or if the FOEB convenes and denies inclusion, the FAA will not grant relief. The equipment must be operational before the aircraft can take off.

c) If the FOEB determines that the equipment should be added to the MMEL, the operator will receive the updated MMEL and must prepare O&M procedures for that piece of equipment.

4) The FSDO should review these petitions to ensure they contain the above information before forwarding the petitions to the FOEB.

C. Operational Options. If the FAA has not yet authorized operating with an MEL for an operator's specific aircraft, the operator may apply for an MEL. However, the operator can always elect to operate without an MEL under the provisions of § 91.213(d).

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1) Section 91.213(d) requires only those instruments listed in § 91.213(d)(2) to be operative.

2) The operator can operate the aircraft with those instruments and equipment not listed in § 91.213(d)(2) inoperative.

4-662 CLARIFICATION OF MEL 10-CALENDAR-DAY SUBMISSION POLICY. This policy change refers to a perceived requirement to submit changes to the geographically responsible FSDO within 10 days of installation of non-safety-of-flight equipment for inclusion in the MMEL by the appropriate FOEB.

A. Reference. Reference is made to current edition of Advisory Circular (AC) 91-67, Minimum Equipment Requirements for General Aviation Operations Under FAR Part 91, and policy guidance provided by Order 8900.1. While AC 91-67 refers to a 10-day application period, no regulatory requirement exists to support this position. The AC, while in question, closely parallels the guidance material in subparagraph 4-661B3) above.

B. Install New Piece of Equipment. An operator who wishes to install a new piece of equipment, which is not a safety-of-flight item listed in § 91.213(b), on an existing airframe, and wishes to operate with an MEL under the provisions of § 91.213(a), may do so and utilize the manufacturer's MMEL for that purpose. Handbook guidance provides for the operator to submit certain documentation to the geographic FSDO within 10 days of the completion of the installation. Such documentation must provide information as required by subparagraphs 4-661B2) and 3)a).

C. Amendments. Amendments to parts 43 and 91 in December 1988 provided a regulatory basis for the operation of aircraft with inoperative instruments and equipment. The concept involves the conduct of operations within a framework of a controlled program of maintenance inspections, repairs, and parts replacement. The required item not addressed is that of the expected utilization of good judgment on the part of the operator such that at the next required inspection, any inoperative instruments or equipment will be repaired, inspected, or have the maintenance deferred as appropriate.

D. Agreement. This office is in agreement with the proposal to change the wording used in the order to reflect the real intent of the guidance. An operator who purchases an aircraft to be used in part 91 operations (as opposed to part 125, 135, or 121 operations (air carrier)) and wishes to add equipment to further utilize and take advantage of the rapid advances in aviation technology may be placed in a disadvantageous position if he or she is required to submit the documentation required for submittal to the FOEB within 10 days of a completion of the installation. While it is true that some operators may have sufficiently preplanned to complete the detailed information prior to contracting the installation, particularly for a new, high-tech piece of equipment, others may see this as a daunting task.

E. Application. The paragraphs, as written, lend the impression that any application to the FOEB for inclusion of new equipment on the manufacturer's MMEL would be denied if the applicant submitted the documentation later than 10 days after installation. The intent of the policy is to provide for timely submission of material to the geographic FSDO.

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F. Non-Safety-of-Flight Equipment. An applicant that has non-safety-of-flight equipment installed on an aircraft should be able to submit the appropriate documentation within a reasonable time period. Once installed in an aircraft operating under the provisions of § 91.213(a), the equipment must be listed on the MEL (manufacturer's MMEL) so as to permit a takeoff if the equipment becomes inoperative. When the operator makes a proposed change to the MEL for acceptance by the FOEB, through the FSDO in accordance with current policy, the operator may then operate as if the change was accepted until being notified otherwise.

G. Requirements. This office agrees that there should be no requirement for an operator to remove equipment currently installed on an aircraft in an attempt to meet the 10-day requirement. A proposed change to the FOEB in addition to the required documentation should be all that is necessary to continue to operate in accordance with § 91.213(a).

4-663 RELATIONSHIP BETWEEN THE PMMEL, MMEL, AND MEL. When an aircraft is first manufactured, the FOEB determines the minimum operative instruments and equipment required for safe flight in that aircraft type in each authorized operating environment. During the type certification process, the manufacturer submits a PMMEL to the FOEB. Based on its determinations, the FOEB reviews the PMMEL and develops an MMEL from it. Once the FOEB approves the MMEL, a copy is available to each FSDO and operator via an automated system that allows the FSDO or operator to download the MMEL. The FSDO provides MMELs to applicants to use, along with the procedures document, preamble, and LOA, as an MEL.

A. MMEL Revisions. As technology changes and new equipment becomes available, the FOEB will reconvene to develop new MMELs or to revise and update existing ones.

B. Notification of Changes. When an FOEB makes a change to an MMEL, all operators using that MMEL as their MEL will receive a postcard advising them of the revised MMEL. The FSDO provides operators copies of the revised MMEL. The operator then makes the necessary changes to the procedures document through the normal revision process.

4-664 SINGLE-ENGINE AND MULTIENGINE MELs. The FAA has developed MMELs for most of the FAA-TC'd aircraft in general service today. All multiengine airplanes have an MMEL that is specific to the type design (e.g., Beech Baron, BE-58). The FAA has developed a generic single-engine MMEL to provide to operators of single-engine aircraft.

4-665 AIRCRAFT FOR WHICH NO MMEL HAS BEEN DEVELOPED.

A. General. If an FOEB has not developed an MMEL for a certain type of rotorcraft, nonturbine-powered airplane, glider, or lighter-than-air aircraft, that aircraft may be operated with inoperative equipment under the provisions of § 91.213(d).

B. Older or Rare Designs. In those cases where an operator has an older or rare design aircraft that has no MMEL, the operator may submit a PMMEL to the appropriate FOEB for evaluation. Once the AEG approves the MMEL, the operator could use it, along with the other required documents, as the MEL.

4-666 MEL RESTRICTIONS. Operators of small rotorcraft, nonturbine-powered small single-engine and multiengine airplanes, and other aircraft for which an MMEL has been

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developed may elect to operate with an MEL or under the provisions of § 91.213(d). However, the latter option does not apply if the aircraft has an MEL approved under part 91 subpart K (part 91K), 121, 125, 129, or 135. For example, an owner has leased an aircraft to an air carrier operator, and the air carrier operator has applied for and received an approved MEL for part 135 operations. Compliance with that MEL is mandatory, even during part 91 operations. If the operator wants to operate under § 91.213(d), the operator would have to surrender the MEL authorization.

4-667 REMOVAL OR DEACTIVATION. When an operator elects to operate without an MEL, any inoperative instrument or equipment must be either removed (under § 91.213(d)(3)(i)) or deactivated (under § 91.213(d)(3)(ii)), then placarded.

A. Removal. Removal of any item of equipment that affects airworthiness of an aircraft requires following an approved procedure. A properly certificated maintenance person must record the removal in accordance with part 43, § 43.9. A person authorized by § 43.7 must make the appropriate adjustments to the aircraft's Weight and Balance (W&B) information and the equipment list, fill out and submit FAA Form 337, and approve the aircraft for return to service.

B. Deactivation. The operator must evaluate any proposed deactivation to assure there is no adverse effect that could render another system less than fully capable of its intended function.

1) A certificated pilot can accomplish deactivation involving routine pilot tasks, such as turning off a system. However, for a pilot to deactivate an item or system, that task must come under the definition of preventive maintenance in part 43 appendix A.

2) If the deactivation procedures do not fall under preventive maintenance, a properly certificated maintenance person must accomplish the deactivation. The maintenance person must record the deactivation according to § 43.9.

C. Placarding. Placarding can be as simple as writing the word "inoperative" on a piece of masking tape and attaching it to the inoperative equipment or to its cockpit control. Placarding is essential since it reminds the pilot that the equipment is inoperative. It also ensures that future flightcrews and maintenance personnel are aware of the discrepancy.

4-668 INOPERATIVE EQUIPMENT AND REQUIRED INSPECTIONS. An operator may defer maintenance on inoperative equipment that has been deactivated or removed and placarded as inoperative.

A. Inspection Due. When an aircraft is due for inspection in accordance with the regulations, the operator should have all of the inoperative items repaired or replaced.

B. Indefinite Deferral. If an owner does not want specific inoperative equipment repaired, then the maintenance person must check each item to see if it conforms to the requirements of § 91.213(d). The operator and maintenance personnel should also assess how permanent removal of the item could affect safe operation of the aircraft.

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1) The repair interval categories (A, B, C, D) in the MMEL do not apply to part 91 MELs.

2) The maintenance person must furnish the owner/operator with a signed and dated list of all discrepancies not repaired.

3) The maintenance person must ensure that each item of inoperative equipment that is to remain inoperative is placarded appropriately.

4-669 CONDUCTING OPERATIONS WITHOUT AN MEL.

A. Applying § 91.213(d). Operating under § 91.213(d) requires no application to or approval from the FAA. An operator, after operating under § 91.213(d), may elect at any time to apply for authorization to operate under an MEL.

B. Decision Sequence. Figure 4-42, Flowchart – Operating without a Minimum Equipment List, is a flowchart depicting the typical sequence of events a pilot or operator, operating under § 91.213(d), should follow when the pilot or operator discovers inoperative equipment. For example, during a preflight inspection for a day VFR cross-country flight, the pilot discovers that the no. 2 automatic direction finding (ADF) head is inoperative.

1) The pilot checks the aircraft's equipment list or KOL to see if the no. 2 ADF is a required item (§ 91.213(d)(2)(ii)). If the no. 2 ADF is required in the equipment list or KOL, the aircraft is not Airworthy. The operator must have the no. 2 ADF replaced or repaired before operating the aircraft. In this example, the no. 2 ADF is not a required item on the equipment list.

2) Next, the pilot checks the airworthiness regulation under which the aircraft was certificated to determine if the no. 2 ADF is part of the VFR-day TC (§ 91.213(d)(2)(i)). If the no. 2 ADF is required as part of the VFR-day type certification, the aircraft is not Airworthy. The operator must have the no. 2 ADF replaced or repaired before operating the aircraft. In this example, the no. 2 ADF is not required by type certification.

3) Next, the pilot checks to see if an AD requires the no. 2 ADF. The pilot can accomplish this by checking the aircraft's maintenance logs to see if the no. 2 ADF was installed as a result of an AD. However, it may be necessary for the pilot to consult a qualified maintenance person to determine AD compliance. If an AD requires the no. 2 ADF to be operative, the aircraft is not Airworthy. The operator must have the no. 2 ADF replaced or repaired before operating the aircraft. In this example, there is no AD requiring the no. 2 ADF to be operative.

4) Next, the pilot checks to see if the no. 2 ADF is required by §§ 91.215, 91.205, or 91.207. The pilot can accomplish this by checking those sections of the regulations or by consulting with a maintenance technician or FSDO personnel. If any of those sections of the regulations require a no. 2 ADF, then the aircraft would not be Airworthy with the no. 2 ADF inoperative. The operator must have the no. 2 ADF replaced or repaired before operating the aircraft. In this example, those sections of the regulations do not require the no. 2 ADF to be operative.

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5) At this point, the inoperative no. 2 ADF must either be removed from the aircraft (§ 91.213(d)(3)(i)) or deactivated (§ 91.213(d)(3)(ii)). The person removing or deactivating the No. 2 ADF must placard it as inoperative in the appropriate location. (A pilot should consult maintenance personnel before deactivating or have maintenance personnel remove any item of equipment.)

6) Finally, the pilot should decide whether the inoperative no. 2 ADF creates a hazard for the anticipated conditions of the flight, e.g., day VFR.

4-670 OPERATING AIRCRAFT WITH AN MEL.

A. Applying for MEL Approval. The FAA has only one procedure for the issuance of part 91 MELs, which is described below. This is the only process the FSDO will follow for part 91 MEL authorizations. The operator who wishes to conduct operations with an MEL must contact the FSDO that has jurisdiction over the geographic area where the aircraft is based and make an appointment.

1) For part 91 operators seeking MEL authorization, the FSDO will assign a Flight Standards Service (AFS) inspector to advise the applicant about regulatory requirements pertinent to using an MEL. During the initial appointment, the applicant will likely be dealing with a team of inspectors from the operations, airworthiness, and avionics units.

a) The operator must develop the O&M procedures using guidance contained in the manufacturer's aircraft flight and/or maintenance manuals, the manufacturer's recommendations, engineering specifications, and other appropriate sources. An operator may consult FSDO inspectors for advice or clarification, but the operator is responsible for preparing the document.

b) The inspector must discuss with the operator the following considerations for preparing the procedures document:

1. The operator's procedures document may be more restrictive than the MMEL either by the applicant's choice or because of ADs or operating rules. The operator's procedures document may not be less restrictive than the MMEL.

2. The title page of the procedures document must contain the following statement: "This MEL is applicable to part 91 operations only and may not be used for operations conducted under parts 121, 125, 129, or 135."

3. The operator must use the A4A numbering system for equipment and instruments, as is used in all MMELs. The operator must use the A4A numbering system in sequence when describing O&M procedures, including the numbers for equipment installed in the aircraft. When equipment is not installed in a specific aircraft, the applicant need not develop O&M procedures for those items of equipment.

4. Operators must ensure that the procedures document lists the items of equipment that are actually installed on the specific aircraft (except those items over and above

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the type design or previously approved by the AEG). This provides guidance to a pilot as to which items of equipment may be inoperative for a particular operation.

5. Equipment specifically required by the airworthiness rule under which the aircraft is TC'd, equipment required by ADs, and equipment required for specific operations under § 91.213(b)(1) through (3) must be operative. It is important to note that all items related to the airworthiness of the aircraft that are not included on the MMEL must be operative.

6. The repair interval categories (A, B, C, and D) listed in column 1 of the MMEL applies only to operations conducted under parts 121, 125, 129, and 135.

7. Where the MMEL states "as required by 14 CFR," the procedures document should list the particular regulation by part and section or describe the actual 14 CFR requirement applicable to the operator's particular operation. For example, where the regulation requires a clock for IFR flight, the operator's procedures document should say "May be inoperative for VFR."

8. The procedures document must specify suitable limitations in the form of placards, maintenance procedures, crew operating procedures, and other restrictions to ensure an acceptable level of safety.

9. The procedures document must specify those conditions under which an item may be inoperative. The remarks must also identify required maintenance or operational tasks. The symbol O or M, placed in column 4 of the MMEL, indicates that an operations or maintenance procedure is applicable to that item. Indicating the O&M procedures in the procedures document provides flightcrews and ground support personnel with a single procedural reference document.

10. If the O&M procedures are already stated in the AFM, the maintenance manual, or other available FAA-approved source, the operator needs only to show the reference; e.g., O: AFM, pp. 3-8 through 3-10, paragraph 3-47. If the operator uses this reference format in the procedures document, the referenced source must be readily available to the ground support personnel and a copy of the references source must be carried in the aircraft and be readily available to the flightcrew.

11. If O&M procedures are not in the AFM, maintenance manual, or other available FAA-approved source, or if the operator wishes to use a different procedure, then the operator must list the procedure in the procedures document.

12. The procedures document may not conflict with AFM limitations, emergency procedures, ADs, or the AMM.

2) An operator may begin operations before completion of the procedures document. If the operator has not yet developed a procedure for an item, that item must be operative. When an instrument or item of equipment becomes inoperative, the operator must follow the procedure indicated in the procedures document or the operator could be in noncompliance with the regulations.

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B. MEL Authorization. The MEL applies only to a particular aircraft make, model, serial number, and registration number and only to the operator who received the authorization.

1) When more than one person has operational control of a specific aircraft, all operators must meet with inspectors from the issuing FSDO to discuss MEL operational considerations. The FSDO may find it appropriate to list all operators on the LOA with the exception being a fractional ownership situation as noted in subparagraph 4-658B13). Each operator must sign the Statement of Operator on the LOA.

2) The FSDO may issue operators who use several aircraft of the same type a single LOA that lists each aircraft by serial and registration numbers. The FSDO will issue separate LOAs for different types of aircraft.

a) When operators add or delete aircraft of the same type from their fleet, they must notify the FSDO having oversight within 10 calendar-days following the change. The FSDO will reissue the LOA containing the new information. Again, both the operator and the inspector must sign the new LOA.

b) The operator must surrender the previous LOA upon reissuance of a new one. The FSDO should place the old LOA in the operator's file.

3) At any time after operating with a part 91 MEL, an operator may elect to operate under § 91.213(d). The operator must surrender the LOA to the issuing FSDO and must conform to all provisions of § 91.213(d) during operations.

C. Revisions. The operator may have to revise the procedures document under several conditions: The AEG may authorize an FOEB to revise the MMEL, the operator may add equipment, or the FOEB may develop a type-specific MMEL for a single-engine aircraft.

1) When the FOEB revises an MMEL, the FAA automated national MMEL database notifies operators who have MEL authorizations by mail. The operator is then responsible for obtaining a copy of the revised MMEL. Within 30 calendar-days of notification, the operator must replace the superseded revision of the MMEL with the current revision and add or delete procedures to its procedures document, as applicable. The operator should advise the issuing FSDO that they have revised their MEL with the current MMEL revision.

2) Within 10 calendar-days of installing new equipment not on the MMEL, the operator may request that the MMEL be amended if the operator seeks relief for that item.

a) If the items of newly installed equipment are not safety related and exceed what is listed on the MMEL, and if the FSDO determines that the equipment has not previously been denied for inclusion in an MMEL, the operator may petition the FOEB for inclusion of the newly installed equipment in the MMEL. All petitions, with appropriate supporting information, will be forwarded by the FSDO to the appropriate FOEB. The operator may then temporarily add the equipment to the MMEL and develop appropriate O&M procedures for the equipment. The operator may then operate with the equipment inoperative pending a decision by the FOEB on the operator's request for an MMEL revision to include the equipment.

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b) If the FOEB has previously denied the inclusion of the equipment, if the equipment is safety related, or if the equipment was previously installed or is factory original, the operator may still petition the FOEB through the FSDO to include the equipment on the MMEL. However, the operator may not gain relief for the equipment by temporarily adding it to the MMEL and adding procedures to the procedures document pending the FOEB's decision. The equipment must be operative before operating the aircraft.

3) Although the FAA has developed a generic MMEL for operators of single-engine aircraft, an FOEB may decide that a complex, turbine-powered single-engine aircraft requires a type-specific MMEL. For example, an FOEB has developed a type-specific MMEL for the Cessna 208 Caravan.

a) When an FOEB develops a specific MMEL for a single-engine aircraft, the FAA will notify all holders of MELs for that aircraft under a generic MMEL that the specific MMEL is available.

b) Within 30 calendar-days of notification, the operator must obtain the MMEL and begin the process for a new LOA. Only by issuing a new LOA will the FSDO be assured that the operator has and is using the type-specific MMEL.

c) Once the FSDO issues the new LOA, the operator must develop, within an additional 30 calendar-days, a new procedures document that conforms to the requirements of the type-specific MMEL. The operator will find that most of the procedures that were acceptable under the generic MMEL will transfer to the new procedures document. If equipment becomes inoperative while the operator is developing the new procedures document, the operator may still use the previous procedures, as appropriate.

D. Conducting Operations with an MEL. In addition to carrying the documents that comprise the MEL on board the aircraft, the operator must have on board any technical manuals needed to accomplish O&M procedures. Figure 4-43, Flowchart–Operating with a Minimum Equipment List, illustrates the sequence of events involved in applying the MEL to inoperative equipment.

1) Items Inoperative Before Flight. During a preflight inspection for a day VFR flight, the pilot discovers that the navigation lights are inoperative.

a) The pilot checks the aircraft's MEL to determine under what, if any, flight conditions the aircraft could be operated without operable navigation lights. The MEL indicates that the aircraft may be operated during daylight hours without operable navigation lights.

b) The pilot checks the procedures document and finds that the O procedure is to deactivate the navigation lights by pulling the correct circuit breaker and having it collared by an appropriately certificated person.

c) The pilot places a placard, which indicates that the lights are inoperative, near the navigation light control.

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d) The pilot examines the conditions of the proposed flight and determines that the flight can be conducted safely without navigation lights.

2) In-flight Failures. An MEL applies only to the takeoff of an aircraft with inoperative instruments or equipment. The pilot's operating handbook (POH) or the AFM indicates procedures to follow for instrument or equipment failure in flight. The pilot in command (PIC) should handle the in-flight failure in accordance with those procedures. As soon as possible after landing safely, the PIC must enter a notation of the inoperative equipment in the aircraft's maintenance records, logbooks, or discrepancy record. Before the next takeoff, the pilot must apply the MEL to inoperative equipment as per the procedures in subparagraph 4-670D1). An MEL allows the PIC to defer maintenance on items under the following conditions:

a) The aircraft is in condition for safe flight, and

b) For the inoperative item, the pilot has followed the specific conditions, limitations, and procedures in the procedures document.

E. Correcting MEL Inoperative Items. The MEL permits operations with inoperative equipment for the minimum period of time necessary for equipment repair. It is important that inspectors encourage operators to have repairs done at the earliest opportunity in order to return the aircraft to its design level of safety and reliability. In all cases, inoperative equipment must be repaired or the maintenance deferred at the aircraft's next required inspection (§ 91.405(c)).

1) Operators shall establish procedures to correct those inoperative items authorized within specified time requirements.

2) Owners of aircraft operated under part 91 may opt to use one of several types of airworthiness inspection systems, depending upon how the operator uses the aircraft. Therefore, the time between required inspections or inspection segments will vary.

3) Items of inoperative equipment authorized by the MEL to be inoperative must be inspected or repaired by qualified maintenance personnel or maintenance deferred at the next 100-hour, annual, progressive, or unscheduled inspection. However, if § 91.213 requires that an item be repaired, the item cannot be deferred.

F. Recordkeeping Requirements. A record of inoperative equipment must remain in the aircraft so pilots will be aware of all discrepancies.

1) Since some operators do not carry aircraft logbooks in the aircraft, a discrepancy record or log is a good alternative. When an operator uses this type of discrepancy log in lieu of the aircraft's maintenance records, the operator must retain the log as a part of the aircraft's records as per § 91.417(b).

2) If the operator elects to use the aircraft maintenance record to log inoperative items, that portion of the record must be carried on board the aircraft during all operations.

3) Maintenance procedures and corrective actions shall be accomplished and be recorded according to §§ 43.9, 91.405, and 91.417.

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4) Failure to record an inoperative item may result in operation of the aircraft contrary to the regulations because subsequent pilots would not be able to determine the airworthiness of the aircraft.

G. Aircraft Used in Multiple Operations. Section 91.213(c) allows a person who has an approved MEL under part 121, 125, 129, or 135 to use that MEL for part 91 operations. A part 91K, 121, 125, 129, or 135 MEL must specify requirements for authorized part 91 operators to comply with the more restrictive provisions established in the approved MEL. It is important that operators be capable of conducting operations in accordance with the MEL. This includes, but is not limited to, accomplishing required maintenance in accordance with the certificate holder's requirements.

1) The use of a leased aircraft creates a situation where several persons may be operating the same aircraft under different regulations. For example, a Cessna 340 could be operated by an approved school under 14 CFR part 141, an air carrier under part 135, and by a rental pilot under part 91. The FAA will not approve multiple MELs, which would create pilot confusion with multiple discrepancy lists and multiple sets of procedures for the same aircraft. In the example, the aircraft would operate under the part 135 MEL, including the repair interval categories, with approval from the FSDO for other users to conduct operations under other regulations.

2) FAA allows multiple operator use of a part 91K, 121, 125, 129, or 135 MEL subject to the following conditions:

a) The operator is responsible for training all persons in the MEL's use, including the logging and clearing of discrepancies and the use of the repair interval categories.

b) Operators shall maintain a complete, current list of all persons trained and authorized to use the MEL.

c) The operator is responsible for determining the aircraft's maintenance status on its return from a part 91 operation. The operator must accomplish this before the aircraft returns to part 121, 125, 129, or 135 services.

d) FAA principal operations inspectors (POI) shall verify that operators have established procedures that ensure an acceptable level of safety before authorizing persons to use the MEL under part 91.

4-671 OFFICE FILES. In order to track MEL authorizations and operator revisions, FSDOs must keep an office file on each part 91 operator with an MEL authorization. The file should contain, but is not limited to, the following:

- A copy of the current revision of the MMEL,
- A copy of the LOA,
- Any information on the operator retrieved from the various Aviation Safety Analysis System (ASAS) and subsystems,
- Any petitions from the operator for revisions to the MMEL,

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- Any negative responses from the FOEB to petitions for MMEL revisions,
- Inspection reports, and
- Any other correspondence from or to the operator concerning MEL authorization.

4-672 INSPECTION OF THE PROCEDURES DOCUMENT. Since the FAA does not approve procedures documents for part 91 operators with an MEL authorization, inspectors must take advantage of any opportunities to examine them and to check that the operator is using the current revision of the MMEL.

A. Surveillance. During part 91 ramp inspections, inspections of corporate/executive operators (including part 125 deviation holders), or base inspections of any operator or air agency, inspectors shall examine the procedures documents for content and appropriateness. (See Volume 6, Chapter 1, Section 1, Inspect an Executive/Corporate Operator; and Volume 6, Chapter 1, Section 4, Conduct a Part 91 Ramp Inspection.)

B. Investigations. While investigating any incident, accident, or case of noncompliance, the inspector should review the operator's LOA and procedures document and incorporate them as official exhibits, if appropriate.

C. Airman Certification. When conducting airman certification functions, an inspector should remind the pilot to have the STC, if applicable, on board the aircraft when arriving for the practical test. The inspector should examine the procedures document, the LOA, and the MMEL before conducting the practical test.

D. Results. The inspector must document the results of checking an operator's MEL authorization under any of the above circumstances.

1) The inspector should place the results of examining the procedures document in the office file on the operator.

2) If an inspector encounters any problems with the procedures outlined in the document, the inspector should describe to the operator how they can be fixed and follow up in writing to the operator. Again, the inspector should place this record in the operator's office file.

3) The inspector should note the revision number of the MMEL used by the operator then compare it with the most current revision. If the operator does not have the current revision, the inspector must contact the operator and inform the operator of the current revision's availability.

4) If the operator has been issued an MEL authorization from another FSDO, the inspector should transmit a copy of the findings to the issuing office for their records.

4-673 PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. This task requires knowledge of the regulatory requirements of part 91 and FAA policies and qualification as an aviation safety inspector (ASI) (Operations). If applicable, the inspector should hold the appropriate type rating for the aircraft for which the operator is seeking MEL authorization or be rated in the same category and class of aircraft.

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B. Coordination. This task requires coordination with airworthiness and avionics and possibly with the appropriate AEG or FOEB.

4-674 REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions).

- All applicable regulations, and
- AC 91-67, Minimum Equipment Requirements for General Aviation Operations under FAR Part 91.

B. Forms. FAA Form 8430-7, Master Minimum Equipment List.

C. Job Aids. Sample letters and figures (Figures 4-40 through 4-44).

4-675 PROCEDURES.

A. Initial Inquiry. Upon inquiry from an operator concerning operation with an MEL, determine the make and model aircraft for which the operator is seeking MEL authorization.

1) Schedule an appointment for a meeting with the operator.

2) Coordinate with the airworthiness unit for representation at the meeting.

3) Review a copy of the appropriate MMEL with the preamble applicable to part 91 operations and AC 91-67.

4) Open the PTRS.

B. Meeting with MEL Applicant.

1) At the meeting provide the applicant with the following:

a) A copy of the appropriate MMEL with the preamble applicable to part 91 operations (see Figure 4-40).

b) A sample title page.

c) A copy of AC 91-67.

2) Discuss the differences between operating under § 91.213(d) and operating with an MEL. (See paragraphs 4-661 and 4-662.)

a) If the operator elects to continue with the MEL process, continue the briefing.

b) If the operator elects to operate under § 91.213(d), reiterate the process for operating with inoperative equipment (see Figure 4-42). Close out the PTRS with an appropriate comment.

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3) Discuss with the applicant the MMEL and how it reflects the equipment installed on the applicant's particular aircraft.

a) If the operator has installed items of equipment that are not on the MMEL, inform the operator that he or she must request through the FSDO that the MMEL be amended to include those items of equipment.

b) Explain that the repair interval categories on the MMEL are applicable only to parts 121, 125, 129, and 135 operations.

4) Discuss the requirements for the procedures document.

a) See subparagraph 4-670A1)b).

b) Explain that the provisions of the procedures document may not be less restrictive than those of the MMEL.

5) Discuss the operator's responsibilities when operating with an MEL:

a) What operations will be authorized.

b) Operations with inoperative equipment.

c) Repair or replacement of items at the next inspection.

d) Deferral of repairs or replacements.

e) Removal and deactivation.

f) Placarding.

g) Record keeping requirements.

h) Multiple operations, if applicable. (See subparagraph 4-670G.)

i) Revisions.

6) Based upon the discussion with the applicant, determine if the applicant understands the requirements for operating with an MEL authorization.

a) If it is apparent the operator requires further study of the responsibilities involved with MEL authorizations, schedule a meeting at a later date. Remind the operator that the operator must conduct operations under § 91.213(d).

b) If the operator fully understands what is required for operation with an MEL authorization, issue the LOA (Figure 4-44, Letter of Authorization).

7) Issue the LOA. Ensure that LOAs issued to management companies indicate the name of the management company and not the individual owners. When preparing the LOA as

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per the sample in Figure 4-44, insert the name of the management company only in each instance where the sample says [name of operator].

a) Explain that the LOA, the MMEL, and its preamble constitute an STC and, as such, is the MEL for the particular aircraft.

b) Explain that the LOA is issued to the applicant under the applicant's legal name and to the address of the operator's principal base of operations.

c) Explain that the operator is now responsible for developing the procedures document.

1. Explain that the operator may begin operations under the MEL authorization while developing the procedures document.

2. Remind the operator that if the operator has not yet developed a procedure for an item of equipment, that item of equipment must be operative until the procedure is developed.

3. Remind the operator that once the operator has developed a procedure for an item of equipment and that item of equipment becomes inoperative, the operator must follow the appropriate procedure in the procedures document.

d) Sign the LOA and have the operator (or the operator's bona fide representative) sign it.

C. PTRS. Close out the PTRS.

4-676 MEL REVISIONS.

A. FOEB Revisions.

1) Provide the operator with the revised MMEL.

2) Inform the operator that the operator must incorporate the applicable changes to the procedures document.

B. Operator Installation of Equipment Not on MMEL.

1) Inform the operator that the operator must apply through the FSDO for an MMEL amendment within 10 days of installing the equipment.

2) Inform the applicant that once the FOEB approves the addition to the MMEL, the operator must amend the procedures document.

3) If the FOEB denies the amendment to the MMEL, inform the operator that the equipment cannot be added to the procedures document. Remind the operator that the equipment must be operative when conducting operations.

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C. Issuance of Type-Specific Single-Engine MMELs.

1) Upon receipt of notification of the type-specific MMEL, inform the operator that:

a) The FAA must issue a new LOA, and

b) The operator must develop a new procedures document based on the type-specific MMEL.

2) Follow the procedures in paragraph 4-675 for issuing the new LOA.

3) Make appropriate PTRS entries.

4-677 TASK OUTCOMES.

- Issuance of an LOA.
- Issuance of a new LOA based on a revision to an MMEL.

4-678 FUTURE ACTIVITIES.

A. Discussing MMEL revisions with applicants.

B. Issuance of a new LOA after revision of an MEL.

C. Surveillance of holders of MEL authorizations.

D. Possible enforcement investigation if operators do not operate in accordance with the MEL authorization.

E. Cancellation of a part 91 MEL because of change of ownership, because of the operator's failure to comply with MEL requirements, or at the operator's request.

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Figure 4-40. Preamble for Part 91 Operations

Page:
Revision:
Date:

FEDERAL AVIATION ADMINISTRATION
MASTER MINIMUM EQUIPMENT LIST
(INSERT AIRCRAFT TYPE)

Preamble – PART 91 ONLY

(Effective 7/5/90)

This preamble is applicable to, and will be included in, Master Minimum Equipment List (MMEL) issued under the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 91, § 91.213(a)(2). It is not applicable to MMELs issued under the provisions of 14 CFR parts 121, 125, 129, and 135.

Except as provided in § 91.213(d), or under the provisions of an approved MMEL, all equipment installed on an aircraft in compliance with the airworthiness standards or operating rules must be operative. Experience has shown that with the various levels of redundancy designed into modern aircraft, operation of every system or component installed may not be necessary when the remaining equipment can provide an acceptable level of safety.

The MMEL is developed by the Federal Aviation Administration (FAA), with participation by the aviation industry, to improve aircraft utilization and thereby provide more convenient and economic air transportation for the public. The FAA-approved MMEL includes only those items of equipment which the Administrator finds may be inoperative and yet maintain an acceptable level of safety by appropriate conditions and limitations. The MMEL and FAA-issued Letter of Authorization (LOA) are used as a minimum equipment list (MEL) by an operator and permit operation of the aircraft with inoperative equipment.

The MMEL includes all items of installed equipment that are permitted to be inoperative. Equipment required by 14 CFR, and optional equipment in excess of the 14 CFR requirements, is included with appropriate conditions and limitations. For each listed item, the installed equipment configuration considered to be normal for the aircraft (except for passenger convenience items such as galley equipment and passenger entertainment devices), such as Traffic Alert and Collision Avoidance System (TCAS), wind shear detection devices, and ground proximity warning system (GPWS) that are in excess of what is required, and are not listed on the MMEL, must be operational for dispatch unless MMEL relief is sought through the Flight Standards District Office (FSDO) having jurisdiction for the operator. If MMEL relief is sought, the operator must notify the FSDO who will make a request of the Flight Operations Evaluation Board (FOEB) to convene and consider adding the equipment to the MMEL. The operator may then dispatch with the equipment disabled, or rendered inoperative, in accordance with 14 CFR. It is incumbent on the operator to endeavor to determine if operations and/or maintenance procedures for that equipment must be developed. If so, any procedures developed must comply with all 14 CFR. Procedures developed to use the MMEL must not conflict with either the Aircraft Flight Manual (AFM) limitations, emergency procedures, or with Airworthiness

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Directives (AD), all of which take precedence over the MMEL and those procedures. Suitable conditions and limitations in the form of placards, maintenance procedures, crew operating procedures, and other restrictions, as necessary, are required to be accomplished by the operator to ensure that an acceptable level of safety is maintained. Those procedures should be developed from guidance provided in the manufacturer's recommendations, engineering specifications, and other appropriate sources. Procedures must not be contrary to any 14 CFR. Wherever the statement as required by 14 CFR appears in the MMEL, the operator must either list the specific 14 CFR by part and section and carry the 14 CFR on board the aircraft or specify the requirements and/or limitations to conduct the flight in accordance with the appropriate 14 CFR.

Page:
Revision:
Date:

FEDERAL AVIATION ADMINISTRATION
MASTER MINIMUM EQUIPMENT LIST
(INSERT AIRCRAFT TYPE)

Preamble – PART 91 ONLY

(Effective 7/5/90)

The MMEL is intended to permit operations with inoperative items of equipment for the minimum period of time necessary until repairs can be accomplished. It is important that repairs be accomplished at the earliest opportunity in order to return the aircraft to its design level of safety and reliability. Inoperative equipment in all cases must be repaired, or inspected and deferred, by qualified maintenance personnel at the next required inspection [§ 91.405(c)]. The repair intervals indicated by the letters A, B, C, and D inserted adjacent to column 2 are not applicable to this MMEL.

The MMEL provides for release of the aircraft for flight with inoperative equipment. When an item of equipment is discovered to be inoperative, it is reported by making an entry in the aircraft maintenance records. The item is then either repaired or deferred per the MMEL or other approved means acceptable to the Administrator prior to further operation. In addition to the specific MMEL conditions and limitations, determination by the operator that the aircraft is in condition for safe operations under anticipated flight conditions must be made for all items of inoperative equipment. When these requirements are met, the aircraft may be considered airworthy and returned to service. Operators are responsible for exercising the necessary operational control to ensure that an acceptable level of safety is maintained. When operating with multiple inoperative items, the interrelationship between those items, and the effect on aircraft operation and crew workload, must be considered. Operators are expected to establish a controlled and sound repair program, including the parts, personnel, facilities, procedures, and schedules to ensure timely repair.

When using the MMEL, compliance with the stated intent of the preamble, definitions, conditions, and limitations specified in the MMEL is required.

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Figure 4-41. Commonly Asked Questions about Minimum Equipment Lists

1. Can an operator make changes to a minimum equipment list (MEL) document without changes having been made to the Master Minimum Equipment List (MMEL)? How do they get approved?

To make changes to the MEL, the operator must contact the Flight Standards District Office (FSDO) exercising jurisdiction over its operation and state, in writing, that it wishes to have the MMEL revised. This would apply to newly installed equipment that is not required by type certification rules, operating rules, and/or is in excess of what is required and is not listed on the MMEL. The FSDO will contact the Flight Operations Evaluation Board (FOEB) and request the equipment be considered at the next meeting of the FOEB. During the interim, the aircraft may be operated with the items of equipment inoperative provided the operator has developed Operations and Maintenance (O&M) procedures (as applicable) that comply with all regulations.

2. What happens if my aircraft is destroyed in an accident? Do I need to return the MEL and letter of authorization (LOA) to the issuing FSDO?

If the MEL and LOA survive in a readable form, they must be surrendered to the issuing FSDO, or the FSDO having jurisdiction for the operator, with an official notification of the aircraft's destruction in an accident. A National Transportation Safety Board (NTSB) indication of the aircraft's destruction is sufficient evidence if the aircraft was destroyed outside of the appropriate FSDO's jurisdiction.

3. What if a Federal Aviation Administration (FAA) inspector asks to see my MEL, procedures document, and LOA?

Because the regulations require that the MEL, procedures document, and LOA be carried on board the aircraft, the operator must show an FAA inspector, or other authorized representative of the Administrator, the documents when requested to do so.

4. What happens when an original MEL is no longer appropriate?

This would depend on the conditions that caused the MEL to become inappropriate, since an MEL must be revised when an MMEL is revised.

5. Does the FAA perform any type of surveillance after approval of an MEL? If so, how often?

FAA inspectors do not specifically survey or inspect operators using an MEL. However, as part of a ramp inspection, inspectors will check to determine if an aircraft is operating with an MEL or under the provisions of Title 14 of the Code of Federal Regulations part 91, § 91.213(d).

6. What happens to the MEL if the aircraft is sold?

The MEL and LOA are not transferable. The MEL and LOA must be surrendered to the FSDO exercising jurisdiction. The new owner must decide if he or she wants to operate with an MEL or under the provisions of § 91.213(d). If the owner elects to operate with an MEL, he or she must apply at the appropriate FSDO.

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7. Can an operator request withdrawal of an approved MEL and elect to operate under § 91.213(d)?

Both provisions of § 91.213 offer relief to operators. Operators will find more relief operating with an MEL. However, an operator can surrender an MEL and LOA by submitting them to the issuing district office with a letter indicating that the operator no longer wishes to operate with an MEL. As of the date the MEL and LOA were surrendered, the aircraft must be operated under § 91.213(d), provided it can meet the requirements of § 91.213(d). If the FSDO determines it cannot, it must continue to operate under the MEL.

8. Can an applicant operate an aircraft under § 91.213(d) while awaiting approval for a proposed MEL?

Under the regulation, the operator would have no choice except to operate under § 91.213(d), to whatever extent he or she can, until authorization to operate under an MEL is received and the LOA issued.

9. If an MEL LOA is issued in one FSDO's jurisdiction, do I have to have it reissued if I'm operating in another area of jurisdiction?

No. The FAA considers an MEL LOA issued by one FSDO as sufficient for use in any other FSDO's jurisdiction.

10. How do I transfer an MEL and LOA if I move out of the jurisdiction of the issuing FSDO?

For a part 91 operation, the operator must notify both the FSDO exercising oversight, and the FSDO that will exercise oversight, of the new location of the aircraft within 10 calendar-days following the relocation. The previous FSDO will then forward the operator's MEL file to the acquiring FSDO through the FAA's regional office having jurisdiction for the new location. The acquiring FSDO will enter the new location information into the national MMEL database for revision and update.

11. There are a number of items on the Beech 58P Baron MMEL that need clarifying. For example, the MMEL states that you can take off with one fuel quantity indicator inoperative provided that an approved reliable means is established to determine there is enough fuel required by regulation. What is an example of an approved means?

The pilot can visually check the fuel and, if it is full, know how much fuel is on board for the flight. A dipstick calibrated for that aircraft, or any other means that provides a positive measurement, would be acceptable.

12. If I hold a 14 CFR part 125 deviation, may I receive authorization to conduct operations under a part 91 MEL?

If an operator holds a deviation to part 125 and does not hold a part 125 operating certificate, they may be issued a LOA to conduct operations under the provisions of a part 91 MEL.

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13. Since I no longer have to submit my O&M procedures to the FSDO for approval prior to receiving the LOA, can I do this by mail?

No. It is important that aviation safety inspectors (ASI) from the issuing FSDO meet with you (or a bona fide representative of you or your organization/company, etc. having signature authority) to discuss MEL operating procedures prior to issuance of the LOA. This is necessary to ascertain your ability to operate in accordance with the provisions of an MEL. All MEL LOAs, therefore, can only be issued in person.

14. Who is a bona fide representative?

It can be anyone with signature authority, i.e.: the chief pilot, director of operations, director of maintenance, or other company officer. In the event that none of the above are applicable, a letter on company letterhead introducing the individual as a bona fide representative and signed by a company officer may suffice.

15. Must I make my request for a meeting with the FSDO inspectors in writing?

There is no specified requirement that the request be made in writing; however, it is the prerogative of the FSDO to make such a request at their option.

16. Must ASIs from all three disciplines (Operations, Maintenance, and Avionics) be available for the meeting to discuss MEL operating procedures?

It is preferred that all three disciplines be represented; however, it is not necessary if due to work constraints they will not be available within a reasonable period of time. It is important that an operations inspector be involved in the discussion since the MEL is an operating document.

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Figure 4-42. Flowchart—Operating without a Minimum Equipment List

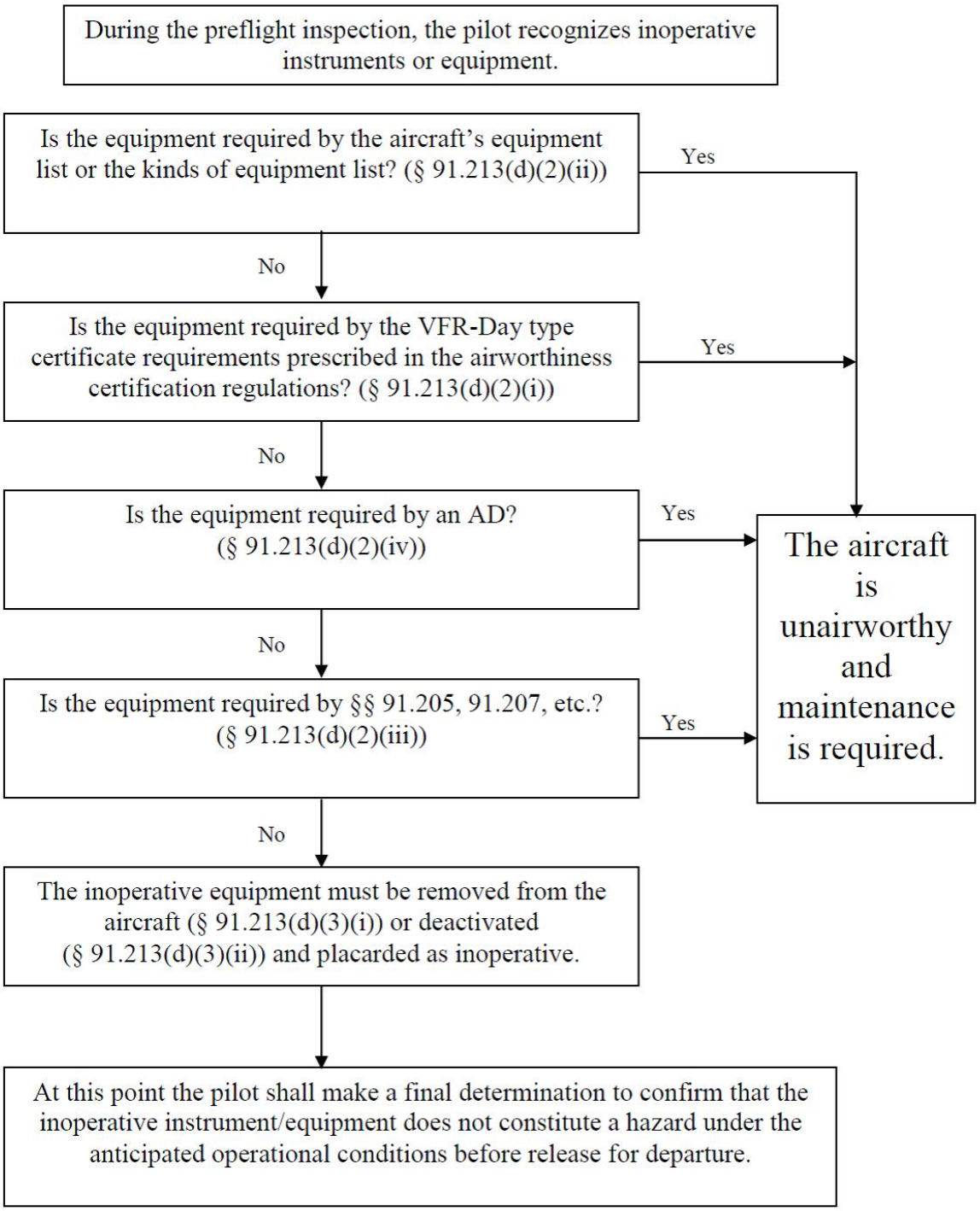

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Figure 4-43. Flowchart—Operating with a Minimum Equipment List

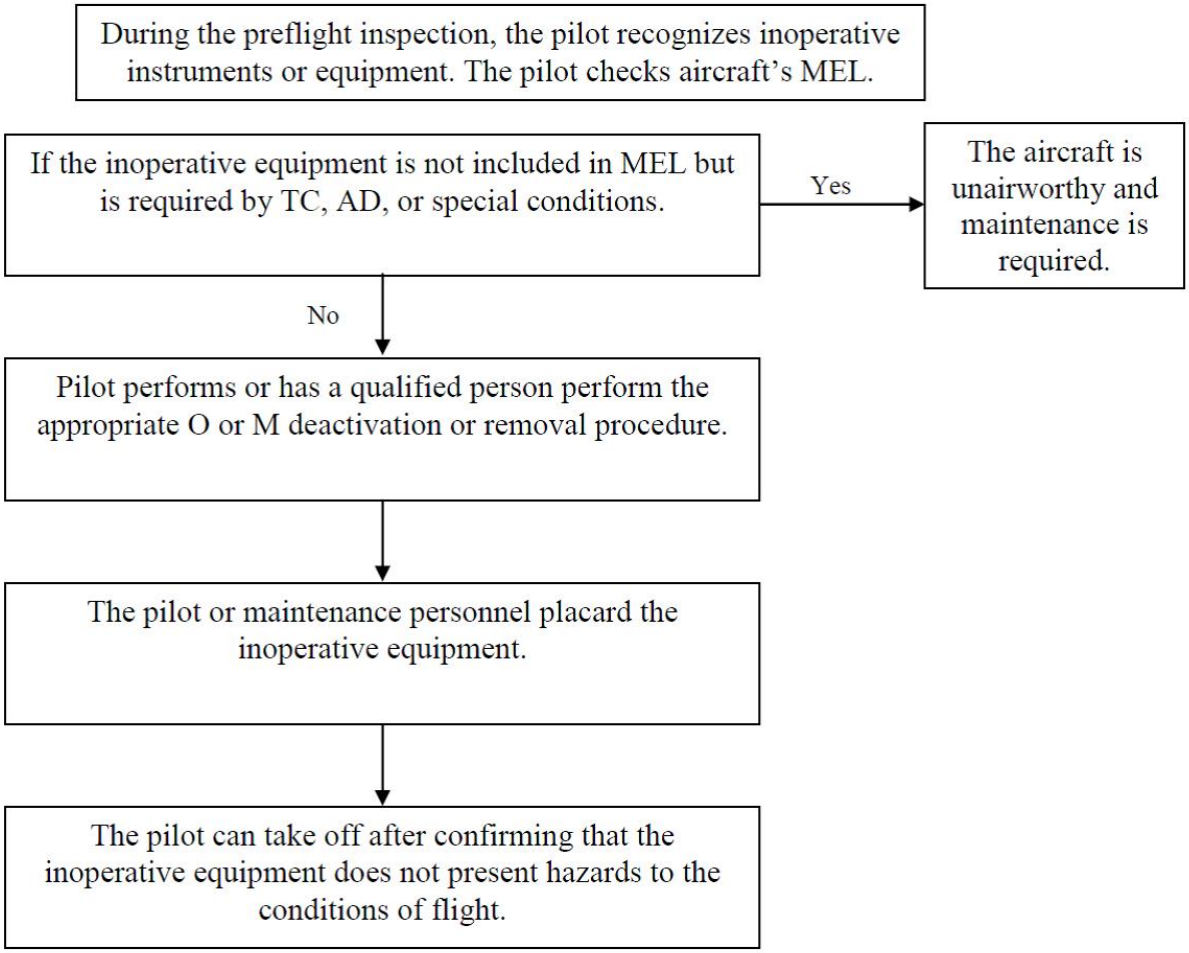

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Figure 4-44. Letter of Authorization

FAA LETTERHEAD

NAME AND ADDRESS OF OPERATOR

Dear [name of operator]:

This letter is issued under the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 91, § 91.213(a)(2) and authorizes [name of operator] only to operate [make and model of aircraft, n-number, and serial number] under the Master Minimum Equipment List (MMEL), using it as a minimum equipment list (MEL).

This letter of authorization and the MMEL constitute a Supplemental Type Certificate (STC) for the aircraft and must be carried on board the aircraft as prescribed by § 91.213(a)(2).

Operations must be conducted in accordance with the MMEL. Operations and Maintenance (O&M) procedures for the accomplishment of rendering items of equipment inoperative must be developed by the operator. Those procedures should be developed from guidance provided in the manufacturer's aircraft flight and/or maintenance manuals, manufacturer's recommendations, engineering specifications, and other appropriate sources. Such operations or maintenance procedures must be accomplished in accordance with the provisions and requirements of 14 CFR part 43, 91, or 145.

A means of recording discrepancies and corrective actions must be in the aircraft at all times and available to the pilot in command. Failure to perform O&M procedures in accordance with parts 43, 91, or 145, as appropriate, or to comply with the provisions of the MMEL, preamble, O&M procedures, and other related documents, is contrary to the regulations and invalidates this letter. All MMEL items that contain the statement, as required by 14 CFR must either state regulation by part and section with the appropriate regulation carried aboard the aircraft, or the operational requirements/limitations required for dispatch must be clearly stated. When the MMEL is revised by the Flight Operations Evaluation Board (FOEB), [name of operator] will be notified by postcard of the revision. [name of operator] must then obtain a copy of the revision from this Flight Standards District Office (FSDO) or the FSDO having jurisdiction and incorporate any changes as soon as practicable, including O&Ms as required.

[name of operator] must develop O&M procedures that correspond with those listed in the MMEL. [name of operator] must also list the "as required by FAR" (now referenced as 14 CFR) by specific part and section or state the operational requirements/limitations for dispatch. These items must be contained in a document separate from the MMEL and must accompany the MMEL, preamble, and letter of authorization (LOA). They must all be on board the aircraft anytime it is operated.

Equipment installed on this aircraft (other than passenger convenience items such as galley equipment and passenger entertainment devices) that are in excess of what is required, and are not listed on the MMEL, must be operational for dispatch unless a request is made to this FSDO (or subsequent FSDO that has jurisdiction) to seek relief from the FOEB, through a revision to the MMEL, at the earliest opportunity for the FOEB to convene. If MMEL relief is sought, this

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FSDO (or subsequent FSDO) must be notified within 10 calendar-days (including weekends and holidays) following installation.

The operator may dispatch provided the excess equipment, if inoperative, is disabled or rendered inoperative in accordance with all regulations. It is the responsibility of [name of operator] to endeavor to determine if O and/or M procedures must be developed for disabling, or rendering inoperative. If so, any procedures that are developed must comply with all regulations. If MMEL relief is not sought, the FSDO need not be notified following installation of the equipment.

Should [name of operator] relocate its principal base of operations at [address], it must notify, in writing, both this FSDO and the new FSDO that will have jurisdiction within 10 calendar-days following relocation.

This letter is issued without an expiration date and will remain valid until voluntarily surrendered by [name of operator], until [name of operator] ceases to be the operator of [aircraft N-number], or it is surrendered or revoked for cause by the FAA. In any case, should it become invalid, it must be returned to this office or the FSDO having jurisdiction within 10 calendar-days from the date it becomes invalid.

Sincerely,

[signed by the principal operations inspector (POI)]

[date]

As evidenced by my signature below, I certificate that [name of operator] will operate [aircraft make and model and N-number] in compliance with the authorizations, provisions, and limitations incumbent with the use of this LOA issued in accordance with § 91.213(a)(2). A copy of this letter will be made a part of the MEL file maintained by this FSDO and [name of operator].

[signed by the operator]

[Title]

[signed by the POI]

[date]

RESERVED. Paragraphs 4-679 through 4-695.

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VOLUME 4 AIRCRAFT EQUIPMENT AND OPERATIONAL AUTHORIZATIONS

CHAPTER 6 AIRPLANE AUTHORIZATIONS AND LIMITATIONS

Section 2 Process a Certificate Holder's Application for Part 121/135 Extended Operations Authorization

NOTE: Refer to the current editions of Advisory Circular (AC) 120-42, Extended Operations (ETOPS and Polar Operations), and AC 135-42, Extended Operations (ETOPS) and Operations in the North Polar Area, for additional detailed information on the Extended Operations (ETOPS) authorization process.

4-1031 PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) ACTIVITY CODES/AIR TRANSPORTATION OVERSIGHT SYSTEM (ATOS) DATA COLLECTION.

A. Operations:

1) PTRS code: 1358.

2) ATOS:

- Safety Attribute Inspection (SAI) 5.1.8 for Design Assessment (DA).
- Element Performance Inspection (EPI) 5.1.8 for Performance Assessment (PA).

B. Airworthiness:

1) PTRS codes: 3368/5368.

2) ATOS:

- SAI 5.1.8 for DA.
- EPI 5.1.8 for PA.

4-1032 OBJECTIVE. This section provides operations and airworthiness guidance for an aviation safety inspector (ASI) to perform an evaluation of a Title 14 of the Code of Federal Regulations (14 CFR) part 121 or 135 certificate holder's request for authorization to conduct ETOPS, per AC 120-42 or AC 135-42. In addition, Volume 4, Chapter 6, Section 3 contains operations and airworthiness surveillance and oversight requirements for existing ETOPS operations.

NOTE: The ETOPS supplemental maintenance programs described in this chapter are not applicable to aircraft with three or more engines operated under either part.

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4-1033 GENERAL.

A. Definition.

1) For part 121 turbine-powered airplanes with two engines, ETOPS are operations conducted over a route containing a point further than 60 minutes flying time at an approved one-engine-inoperative cruise speed under standard conditions (in still air) from an adequate airport.

2) For part 121 turbine-powered airplanes with more than two engines and part 135 multiengine transport category turbine-powered airplanes, ETOPS are passenger-carrying operations conducted over a route containing a point further than 180 minutes at an approved one-engine-inoperative cruise speed under standard conditions (in still air) from an adequate airport.

NOTE: It is important to read and understand the definitions found in part 121, § 121.7 before continuing with the guidance in this chapter.

B. Types of Authorization.

1) Part 121. The Federal Aviation Administration (FAA) approves ETOPS in accordance with the requirements and limitations contained in part 121 appendix P and § 121.161.

- The FAA may authorize ETOPS with two-engine airplanes over a route that contains a point farther than 60 minutes flying time from an adequate airport at an approved one-engine-inoperative cruise speed under standard conditions in still air.
- For passenger-carrying aircraft with more than two engines, § 121.161 may grant authorization to conduct ETOPS operations over a route that contains a point greater than 180 minutes flying time from an adequate airport at an approved one-engine-inoperative cruise speed under standard conditions in still air.

2) Part 135. The FAA approves ETOPS in accordance with the requirements and limitations contained in part 135 appendix G and part 135, § 135.364 and may allow for authorization of passenger-carrying operations over a route that contains a point farther than 180 minutes, but no more than 240 minutes, flying time from an adequate airport at an approved one-engine-inoperative cruise speed under standard conditions in still air.

C. To Be Granted ETOPS Authorizations, the Certificate Holder Must Demonstrate:

1) Part 121: Compliance with the requirements of the applicable rules in accordance with AC 120-42.

2) Part 135: Compliance with the requirements of the applicable rules in accordance with AC 135-42.

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D. Points of Contact (POC). For questions regarding an ETOPS authorization, contact the:

- Air Transportation Division (AFS-200),
- Aircraft Maintenance Division (AFS-300),
- Aircraft Evaluation Group (AEG), or
- Aircraft/Engine Certification Directorate.

4-1034 APPLICATION PROCESS.

A. Initial Contact. The application process usually begins with a visit, phone call, or e-mail from the prospective certificate holder (applicant) to the appropriate certificate-holding district office (CHDO). At that time, ask the following questions and annotate the responses for future reference:

1) Are you familiar with ETOPS requirements?

NOTE: Inform the certificate holder of the applicable regulations and guidance materials they should review.

2) When do you want to start the operation?

3) What kind of operation do you want? Cargo? Passenger? Both?

4) What routes do you want to fly?

5) How many minutes of ETOPS authority are you seeking?

6) What aircraft/engine combination are you going to use?

7) What are your current capabilities?

8) Do you have an operating certificate?

9) If it is a new entrant, do you want to gain non-ETOPS authorization first *or* do you want to do both together?

10) What is a good day and time for you to meet with us?

NOTE: You should schedule an initial meeting with the certificate holder.

B. Preparation for the Initial Meeting.

1) In preparation for the meeting, complete the following tasks:

a) Inform your CHDO management that a certificate holder is interested in applying for ETOPS.

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b) If applicable, discuss the certificate holder's existing programs for any deficiencies that could affect ETOPS authorization with CHDO management.

c) Inform the Regional Office (RO) that a certificate holder is interested in applying for ETOPS.

d) Contact AFS-200 (Headquarters (HQ)). AFS-200 will coordinate with AFS-300.

2) The CHDO office manager coordinates team leaders and members for the meeting. The three required members include the:

a) Principal operations inspector (POI) (Operations).

b) Principal maintenance inspector (PMI) (Airworthiness).

c) Principal avionics inspector (PAI) (Airworthiness).

3) Other resources may include the:

- Assistant principal inspectors.
- Cabin safety inspector (CSI) (Operations).
- Aviation Safety Inspector-Aircraft Dispatch (ASI-AD) (also known as dispatch safety inspector (DSI)) (Operations).
- Partial Program Manager (PPM) (Airworthiness).
- Aircrew program manager (APM) (Operations).
- Navigation specialist for Class II navigation, polar operations, minimum navigation performance specification (MNPS) authority, and areas of magnetic unreliability (AMU).

4) If the CHDO does not have ETOPS expertise, make arrangements to get the required assistance by asking for help from the region in preparation for the initial meeting. If there are no ETOPS POCs in the RO, the region may request assistance from AFS-200/AFS-300 at HQ. This applies to the *entire* process.

C. Conduct the Initial Meeting.

1) Initial Meeting. At the initial meeting, the certificate holder should officially request ETOPS authorization and present the CHDO with the official letter of intent (LOI) and the application package outlined in subparagraph 4-1034E.

2) Notes. Review any notes from the certificate holder's initial contact (phone call, face-to-face, or email).

NOTE: These meetings are *confidential* and participants may only share information derived from them on a *need to know* basis.

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3) Discussion. During the initial meeting, discuss the following items with the certificate holder:

a) POCs. Identify all of the POCs for the certificate holder and CHDO. For example, the CHDO manager should appoint the POI, PMI, or PAI, or an assistant, as the certification project manager (CPM). The certificate holder should also appoint a CPM as a POC.

b) Program Deficiencies. If applicable, identify any existing program deficiencies the certificate holder (applicant) may have. If the applicant has existing ETOPS authority, present any existing ETOPS program deficiencies to the applicant. The applicant/certificate holder must address these deficiencies prior to applying for ETOPS authorization. For example, if the certificate holder has a marginal Continuing Analysis and Surveillance System (CASS), the certificate holder must correct it before the FAA grants ETOPS authority.

c) Identify Appropriate Regulations and Guidance Materials. Identify all of the Federal regulations and guidance materials including 14 CFRs, ACs, and FAA Order 8900.1. Manufacturer's guidance material may also be available.

d) Methods. There are two methods to gain ETOPS authorization: accelerated and in-service. Inform the certificate holder of the 6-month minimum notification requirement prior to the anticipated start date for the accelerated method, and the 60-day minimum notification requirement for the in-service method. The applicant must understand that these times are not negotiable.

1. In accordance with AC 120-42, part 121 applicants may choose to use either method. Depending on the circumstances, discuss the applicable method(s) and be prepared to discuss the pros and cons of each method. Although either method is available for part 121, applicants rarely use the in-service method.

2. In accordance with AC 135-42, part 135 applicants must use the in-service method. A certificate holder can enhance safety when, before conducting ETOPS, a certificate holder gains operational experience in the type of airplane capable of ETOPS, and with the operational environment typically encountered on longer-range flights in areas where there are limited airports available for an en route diversion. Typically, this involves prior operational experience on overwater flights to international areas of operation in accordance with the part 135 regulations and AC.

NOTE: When the in-service method is used, the applicant must understand that all training, processes, and procedures required for ETOPS must already be in place prior to submitting their application.

e) ETOPS Flight Operations Requirements. Brief the applicant on the following:

1. Part 121 Operations. Certificate holders applying for ETOPS authority must present to the CHDO documentation to show that they have policies, procedures, and training programs for pilots, dispatchers, and flight followers (as applicable) to conduct ETOPS. The certificate holder must provide manuals and a training program curriculum to the CHDO for

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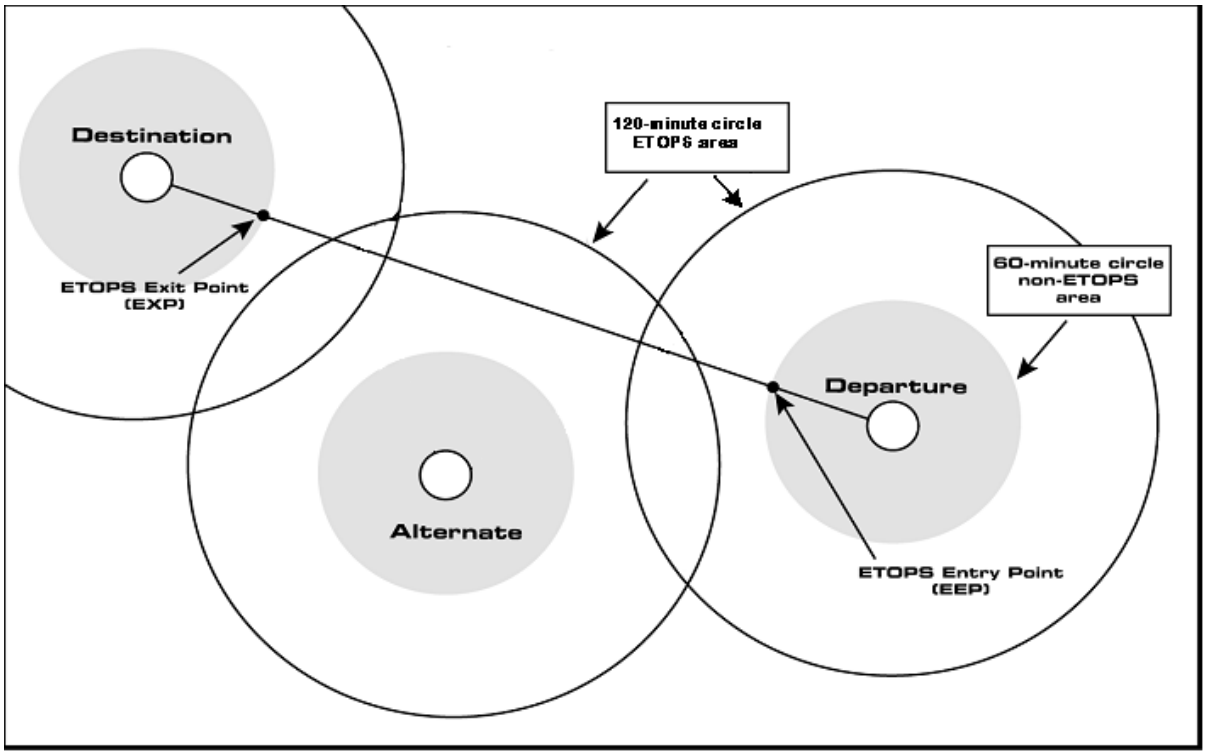
approval. Refer to AC 120-42 for specific requirements. The application must also include the policies and processes that the certificate holder will use to collect, monitor, evaluate, and maintain records for their ETOPS operations.

2. Part 135 Operations. Certificate holders under this part must provide ETOPS training for flightcrew members in accordance with its approved program for ETOPS. Areas of training may be found in AC 135-42, paragraph 302. Due to the unique and demanding nature of ETOPS, certificate holders are urged to provide ETOPS training to individuals conducting flight locating services or who have operational control responsibility.

3. Parts 121 and 135 Applicants. The engine-out speed that applicants will submit for approval will be the basis for ETOPS calculations. In addition, the applicant should provide a graphical display in the form of range circles for the proposed area of operation (see Figure 4-83, Range Circles, and subparagraph 4-1035A2)).

Figure 4-83. Range Circles



f) ETOPS Maintenance Requirements. Ask the certificate holder various questions concerning the ETOPS maintenance requirements to gather additional information. These may include:

1. What airplane/engine combination are they going to use?

2. If they are a certificate holder, do they currently have an approved maintenance program?

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3. Do they understand the supplemental maintenance programs required for two-engine ETOPS operations per AC 120-42, paragraph 301 for part 121, or AC 135-42, paragraph 303 for part 135?

NOTE: Although the initial contact conversation may have conveyed this information, re-affirm it during this meeting.

g) Formal LOI. Inform the applicant that ETOPS authorization requires a formal LOI. The applicant may submit this separately, or it may be part of the application package (discussed later). The formal LOI should include the following information at a minimum:

- Proposed ETOPS operating start date.
- Airplane/engine combination.
- Intended areas of operation.
- Type of ETOPS authorization requested.
- Existing operating certificate information, if applicable.

1. The CHDO will send a copy of the letter to the RO and HQ (AFS-200/300) upon receipt.

2. Inform the applicant that after the FAA CHDO reviews the formal LOI; the CHDO will provide a written response. This response should acknowledge receipt of the letter and should specify acceptance of the LOI, or specify what required information is missing.

3. After the initial meeting with the certificate holder when they have officially requested ETOPS authorization, the CHDO will ensure that the appropriate PTRS entries are made for the evaluation of an ETOPS program (1358, 3368, or 5368, as appropriate). In addition, the CHDO will initiate SAI 5.1.8 for a part 121 certificate holder.

4. The 6-month notification period for the accelerated method and the 60-day notification period for the in-service method begin upon FAA acceptance of the formal LOI. When the applicant uses the in-service method, the applicant must understand that all training, processes, and procedures required for ETOPS must already be in place prior to FAA acceptance of their formal LOI.

D. Optional ETOPS Briefings. HQ (AFS-200/300) will, upon request, provide the CHDO and the certificate holder with an ETOPS briefing. There are two optional briefings available:

1) The first optional briefing is with AFS-200/300, CHDO, and RO members. This briefing establishes relationships, roles, and responsibilities. This meeting helps clarify the lines of communication and authority in regards to the application and subsequent approval process.

2) The second optional briefing will include the FAA team members and the applicant. AFS-200/300 will discuss the entire ETOPS application process and the roles of HQ, the region, and the CHDO during the ETOPS application and validation process.

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NOTE: Additionally, at this meeting AFS-200/300 will inform the applicant that the CHDO is in charge. AFS-200/300 only supports the CHDO, *not* the certificate holder directly. If the certificate holder has any questions, they must go to the CHDO, not to the region or HQ. The point is to make the following perfectly clear: "The CHDO will make the final decision of whether or not the certificate holder has the qualifications to receive ETOPS authorization."

E. Application Package. The applicant must submit an application. The applicant may submit the package at the same time as the LOI; however, the applicant may also submit it later. The application package is the heart of the ETOPS authorization process. It must contain detailed information on the following:

1) As stated earlier, the application package may contain the formal LOI.

2) Defined processes, procedures, and related resources being allocated to initiate and sustain ETOPS operations. These processes, procedures, and related resources are typically referred to as the certificate holder's ETOPS program. The certificate holder must demonstrate a commitment by management and all personnel involved in ETOPS flight operations and maintenance. The applicant must describe in detail how they will address the applicable flight operations requirements as defined in the applicable CFRs and ACs. The applicant must describe in detail how they will address each of the maintenance elements as defined in the applicable CFRs and ACs.

3) ETOPS authorization requested (e.g., 120 or 180 minutes).

4) Proposed routes.

5) Dispatch policies and procedures.

6) Requested method of approval (in-service or accelerated).

NOTE: The method the applicant chooses requires the identification of a formal timeline.

7) Documented plan for compliance with requirements of accelerated ETOPS (if applicable).

8) An approved airplane/engine combination, including engine-out speed, those ETOPS calculations will be based on.

9) Detailed review gates or equivalent. You can find further information about review gates later in this section.

10) Validation process. The validation process requires the applicant to identify a formal timeline.

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F. CHDO Review Process. The CHDO validates whether the applicant included *all* of the required elements in their application package. A review gate process, normally captured in the form of a matrix, may identify all of these elements and can facilitate tracking them throughout the validation process. If the applicant included all of the elements in the application package, then the CHDO will continue with the evaluation process and proceed to evaluate the application package including all of the elements. If there are missing or incomplete elements, the CHDO sends written notification to the certificate holder describing the shortfalls.

NOTE: As an aid to effectively validate the applicant's proposed ETOPS operations and maintenance program, see Volume 4, Chapter 6, Section 3, paragraphs 4-1056 through 4-1060.

G. Review Gates.

NOTE: The review gate process, as defined in AC 120-42, is not detailed or required for the in-service method; however, it is a proven process that is useful in both application methods.

1) The review gate process will help ensure that the applicant's processes comply with the provisions of the applicable rules and AC 120-42 and AC 135-42, and are capable of continued ETOPS operations. Normally, the review gate process will start 6 months, at a minimum, before the proposed start of ETOPS and should continue until at least 6 months after the start of ETOPS.

2) Review gates, or an equivalent method, are helpful to track every aspect of an ETOPS approval and to be able to see the status of the project at a glance. Review gates or milestones should be in a matrix form. The method used should:

a) Include dates of pertinent meetings, data submittals, and FAA reviews and/or approvals.

b) Identify each applicable maintenance and flight operations milestone.

c) Include a "process validation plan."

3) Table 4-22, Extended Operations Authorization Review Gate Matrix Example, found in Volume 4, Chapter 6, Section 3, includes what experience has shown to be a "best-practices" example of a review gate matrix. While we cannot mandate that the applicant complete their information in this format, or in any particular format, a matrix is a proven tool that you can share and you should encourage its use.

H. Process Validation Plan. The process validation plan must include how the applicant intends to validate each of the process elements required to attain ETOPS authorization. This plan will spell out in sufficient detail how the applicant intends to ensure that each required process works. Note that this is a living document and it can change many times.

1) The process validation plan must ensure that each ETOPS process is:

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a) Defined,

b) Demonstrated,

c) Analyzed,

d) Amended (if required),

e) Revalidated, and

f) Proven (prior to ETOPS authorization).

2) The process validation plan may include validation through simulation; however, the regulations require final validations be conducted in the aircraft/engine combination that the prospective certificate holder proposes be used in their ETOPS operation.

3) After the CHDO accepts the completed application package and the defined ETOPS processes it contains, and the application package gets coordinated as necessary with the RO and AFS-200/300, inform the certificate holder to begin the execution of their process validation plan. The certificate holder will complete the process validation plan under FAA observation.

4) The final step in the process validation plan is the validation flights. The applicant cannot institute the validation flight portion of the validation until the CHDO develops scenarios and coordinates them through the region and HQ. Upon concurrence, AFS-200 will issue a memo to the local office that authorizes the certificate holder to conduct validation flights.

NOTE: For a new entrant part 121 certificate holder, it will typically require six non-revenue legs to complete the ETOPS validation process. For a new entrant part 135 certificate holder, it will typically require two non-revenue legs to complete the ETOPS validation process. Proving runs, ditching, and evacuation exercises may be conducted concurrently with ETOPS flights provided these exercises do not interfere with the ETOPS validation.

5) Prior to initiation of ETOPS validation flights, the certificate holder (applicant) must have all aspects of their ETOPS program successfully validated with one exception, that is the physical inspection of all the certificate holder's proposed ETOPS stations/facilities. For new ETOPS operators, Airworthiness ASIs from the CHDO may conduct ETOPS station/facility inspections in conjunction with the ETOPS validation flights. It is understood that it may not be possible for CHDO ASIs to visit all of the operator's ETOPS station/facilities during the validation flight process. Ideally, a CHDO ASI should accomplish an ETOPS station/facility inspection prior to an operator conducting revenue ETOPS operations at all of its stations. In the event that this course of action is not practical, principal ASIs must ensure that all of the operator's ETOPS stations/facilities are evaluated within 90 days after the commencement of revenue ETOPS service. The principal Airworthiness ASI must ensure the accomplishment of these evaluations to make certain that every ETOPS station/facility contains all of the elements required to sustain successful ETOPS operations.

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6) If the validation flight process is successful, then the certificate holder may be granted ETOPS authority.

4-1035 ETOPS VALIDATION FLIGHTS (PARTS 121 AND 135). The CHDO, after receiving the certificate holder's application, will validate the submitted processes and procedures. The validation process will conclude with validation flights. This ensures that the certificate holder's policies, procedures, and training will enable the certificate holder to safely conduct ETOPS operations. For initial ETOPS approval, a part 121 certificate holder may be required to fly six non-revenue flight legs. A part 135 certificate holder may be required to fly two non-revenue flight legs. If the certificate holder has existing ETOPS approval and is adding a new aircraft/engine combination, a change to their existing authorization (120 minutes to 180 minutes), or a new geographic area of operation to its ETOPS approval, the certificate holder may be required to fly two flight legs (revenue service may be appropriate). Prior to the initiation of validation flights, the CHDO will issue appropriate operations specifications (OpSpecs) that are restricted to validation flights only (see paragraph 4-1037).

A. Validation Flight Emphasis Areas. The following areas should be given special focus by the principal inspectors (PI) during the approval process. It is recommended that an ASI-AD, commonly referred to as a dispatch inspector or DSI, participate in the ETOPS approval process. If the CHDO does not have an ASI-AD, they should request one be assigned by the RO for the duration of the approval process. If the RO is unable to locate an ASI-AD, the RO should contact AFS-200 for assistance in locating an ASI-AD resource.

NOTE: Unless noted otherwise, all items are identical for both parts 121 and 135 operations.

1) Airplane and Flight Planning Data. The CHDO should ensure that the certificate holder is utilizing the appropriate airplane manufacturer's performance for the calculation of the ETOPS performance data. This information must be available for use by flightcrew members, dispatchers, flight followers, and flight locators and must include the following:

a) One-engine-inoperative level off (gross) fuel planning.

b) One-engine-inoperative level off fuel planning at 10,000 feet.

c) All-engine operating fuel planning to comply with oxygen requirements of § 121.333.

d) The certificate holder must show it can obtain the appropriate winds aloft data for the area of operation in which they are planning to conduct operations. The wind forecasts model utilized in the flight planning system must be World Area Forecast System (WAFS) Grid In Binary (GRIB) data wind forecasts. The GRIB forecast must have a minimum of 140 kilometers (km) horizontal resolution (1.25 degrees). This data must then be biased (increased) by 5 percent of the wind speed to correct for possible variations in the actual winds aloft that could result in an increase in headwind or a decrease in tailwind.

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NOTE: The 5-percent increase cannot be added to the tail wind component to improve the fuel burn calculation. If the certificate holder's flight planning system does not utilize 140 km horizontal resolution GRIB data, the CHDO should consult AFS-220 for additional guidance.

e) The flight planning system utilized by the certificate holder must base all ETOPS fuel calculations required by § 121.646 on aircraft-specific performance data in accordance with their approved program for each aircraft type. If the certificate holder does not have an approved program to monitor the in-flight performance of each aircraft it operates and adjust fuel calculations accordingly, then each ETOPS fuel calculation utilized by the certificate holder must include a 5-percent fuel penalty to account for engine degradation and airframe drag.

f) The in-flight aircraft performance data and ETOPS fuel calculations must consider the additional fuel burn required to account for the use of engine and wing anti-ice for the entire time icing is forecast or ice accretion plus wing and engine anti-ice for 10 percent of the time icing is forecast, whichever is greater.

g) The ETOPS fuel calculations must also include fuel for auxiliary power unit (APU) use, if the APU is a required power source during the flight, and fuel to account for holding, approach, and landing.

2) ETOPS Area of Operation. The certificate holder must show before validation testing that the altitudes and airspeeds used in establishing the ETOPS area of operations for each airplane/engine combination comply with the terrain and obstruction clearance, as well as the critical fuel scenario associated with the applicable ETOPS equal-time point (§ 121.646) and the time-limited system requirements of § 121.633 are not exceeded.

3) En Route Airport Information. Section 121.7 requires the certificate holder to assemble a list of airports for the proposed ETOPS area of operation. This list should be reviewed by the CHDO to determine that the certificate holder is able to access and maintain current information on the operational capabilities of the airports. The certificate holder's program should provide flightcrew members, dispatchers, flight followers, and flight locators with current and forecasted weather, field conditions, Notices to Airmen (NOTAM), rescue and fire fighting services (RFFS), and any other information that may affect the safe operation of the aircraft into the airport with one engine inoperative. See Figure 4-84, Foreign Airport Assessment Aid.

a) **Adequate Airports.** Section 121.7 allows a certificate holder to list an adequate airport, with FAA approval. An adequate airport must meet the requirements of 14 CFR part 139 subpart D or be an active and operational military airport. In order to be considered adequate for a specific ETOPS operation (flight), the airport must be open and the certificate holder should be able to show that they can land at the airport in accordance with the performance requirements of § 121.197. Unless operating in North Atlantic (NAT) oceanic airspace in accordance with OpSpec paragraph B041, the weather at an adequate airport does not have to meet the landing minimums specified in the certificate holder's OpSpecs.

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b) **ETOPS Alternate Airports.** Section 121.7 requires the certificate holder to list ETOPS alternate airports in their OpSpecs. The certificate holder may list these airports as being strictly for use as ETOPS alternate airports or they may also use any regular, provisional, or refueling airport that is listed in their OpSpec paragraph C070 for use as an ETOPS alternate.

c) **Alternate Requirements.** ETOPS alternate airports must meet the alternate requirements contained in the certificate holder's OpSpec paragraph C055 prior to takeoff. Once the flight is en route, the weather minimums at an ETOPS alternate airport may fall below the minimums contained in OpSpec C055 but they must remain at or above the landing minimums prescribed in the certificate holder's OpSpecs (Part C).

NOTE: Any time the weather at the designated ETOPS alternate drops below alternate minimums, the POI must ensure that the certificate holder has procedures in place that indicate they shall make every effort to change the alternate to another approved airport within the maximum diversion time of the aircraft.

d) **Operations Beyond 180 Minutes or in the North or South Polar Area.** For operations conducted in the North or South Polar Area, the certificate holder must provide a specific passenger recovery plan for the designated ETOPS alternate airports (diversion airports).

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Figure 4-84. Foreign Airport Assessment Aid

Foreign Airport Assessment Aid:			
Date of Assessment:			
Assessment Conducted by:			
Airport ICAO/IATA Identification:		Airport Name:	
Hours of Operation:			
Area	Regulation	Section	Details and Remarks
1	Personnel	139.303(a) *	
			Staffing hours
			Operations Phone Number
2	Airport Overview	121.97	
			Runways
			Taxiways
			Special Airport Qualification
			Pans Ops or TERPS assessment
		139.331 *	Airport Obstacle Assessment ****
			Restrictions
3	Airport Lighting and Navigation Aids	121.97	
			Category III markings and ground surface movement area
			Instrument Approaches Available
4	Snow and Ice Control Plan	139.313 *	
		139.313 (b)(1)	Prompt Removal
		139.313(b)(5)	Access to Field Condition Reports
5	Airport Rescue and Firefighting (ARFF)	121.106	
		121.106(a)(1)	
	(2) **	Category and hours of operation (ICAO index 4 minimum)	
		139.319(i)(2)	Personnel Trained
			Hours of Operation
		139.319(g)	Storage of ARFF Vehicles
			Contact Phone Number
6	Aircraft Fueling		
			Type of Fuel
			Fuel Auditing
			Contact Phone Number
7	Airport Emergency Plan	139.325 *	
			Contact Information for Aircraft or Medical Emergency
8	Airspace	Operations Specification C080	
			Airspace Category
			Controlled Airspace Hours of Operation
			Air Traffic Control Tower or CTAF
		139.323(b) *	Segmented Circle and Lighted Wind Indicator ***
		121.624	Weather Reporting access to Metars
			Availability of a TAF
9	Public Protection	121.624 *	
		139.335(a)(1)	Security Program to restrict access to aircraft movement
	Notes:		
	* Required for airport to be considered "Adequate" IAW 121.7		
	** ARFF ICAO Index 7 required for airports which the air carrier utilizes for operations beyond 180 minutes.		
	*** Required only if the airport does not have a 24 hour tower operation.		
	**** Obstacles within the airport boundaries are accounted for by the assessment and properly illuminated		

4) One-Engine-Inoperative Speed Selection. The one-engine-inoperative cruise speed is a speed that is within the certified operating limits of the airplane that the certificate holder specifies and the FAA approves. The speed selected is used to determine the still air (no wind), 60-minute range (distance) centered on the adequate airports identified in subparagraph 4-1035A3). If the route of flight takes the aircraft out of this area, the operation must be conducted in accordance with the approved ETOPS program (see Figure 4-83). The

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certificate holder makes the calculation for the ETOPS maximum diversion times (e.g., 120 or 180 minutes); utilizing the FAA-approved one-engine-inoperative speed. The ETOPS operation must remain within the maximum no-wind distance (based on the maximum diversion time) of the selected ETOPS alternate airports. Normally, the certificate holder will produce a planning chart (paper or electronic) that shows the normal one-engine-inoperative cruise range in the form of circles (Figure 4-83).

NOTE: ETOPS fuel calculations must take into account and comply with terrain clearance, § 121.191, and oxygen requirements contained in §§ 121.329 and 121.333. If the rule required for ETOPS in accordance with § 121.646 exceeds the fuel required by § 121.645, then the flight is considered to be "ETOPS Fuel Critical." The certificate holder must carry the greater of the fuel required by §§ 121.645 and 121.646.

5) Recalculation of Flight Plan While En Route.

a) The certificate holder should have the capability to recalculate the flight plan after departure (in-flight reanalysis). Depending on the route of flight, the ETOPS Entry Point (EEP) can be many hours after departure. Section 121.631(c) requires a reanalysis of the weather at each ETOPS alternate airport prior to entry into the ETOPS airspace. An analysis of the current status of the aircraft systems should also be conducted to ensure all ETOPS significant systems are functioning normally. If the weather at any ETOPS alternate airport falls below landing minimums or any ETOPS significant system becomes inoperative prior to reaching the EEP, the certificate holder must evaluate the impact and take appropriate actions, which may require an in-flight reanalysis of the route of flight, fuel calculations, or any other elements of the flight plan.

b) In addition, the certificate holder should have the capability to re-calculate the flight plan in the event of an en route deviation or reroute to ensure that the aircraft remains within the maximum diversion time of the ETOPS alternate airports, or an appropriate adequate airport, if the new route of flight takes the aircraft out of the maximum diversion range of the listed ETOPS alternate airports.

6) Computer Flight Plan (CFP) System. The certificate holder should substantiate that the CFP and dispatch/flight release system is capable of providing the following information to the pilot and dispatcher:

a) Flight planning based on latitude/longitude as well as air traffic system routings in the event of an in-flight diversion.

b) Dynamic graphic display of ETOPS circles, based on speed selected during preplanning.

c) Depending on the aircraft type, the aircraft must be able to carry additional fuel for stronger-than-planned winds and additional fuel for icing.

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d) A database with a list of suitable en route (ETOPS) alternates where the dispatcher would select from the list based on type of operation and aircraft; e.g., 120 or 180 minutes with a two- or four-engine aircraft.

e) Accuracy of internal computer calculations for the all critical fuel scenario calculations.

f) Ability to apply minimum equipment list (MEL)/Configuration Deviation List (CDL) restrictions and penalties unique to ETOPS operations.

g) Automated equal time point (ETP) calculations. (The certificate holder should maintain the ability to calculate and plot the ETP manually.)

h) Ability to plan a random route flight plan and depending on the operation, select the best route of flight based on a GRIB wind forecast.

i) Calculation of flight information region (FIR) entry and exit points.

j) EEP and ETOPS exit point calculations and display on the CFP.

k) Ability to display to the dispatcher and list on the CFP the forecast valid time of integrated GRIB wind data.

l) ARINC-424 navigation data to show consistency between the CFP and the navigation database utilized in the airplane.

m) International duty/rest time calculations.

NOTE: The certificate holder should substantiate all values in the CFP system against aircraft manufacturer data prior to validation flights. The CFP values will be validated during the ETOPS validation flights.

7) Weather Information System. The certificate holder should substantiate that the weather information system that it uses can be relied on to forecast terminal and en route weather, including icing forecasts, with a reasonable degree of accuracy and reliability in the proposed areas of operation. Factors such as staffing, dispatcher, training, sources of weather reports and forecasts and, when possible, a record of forecast reliability should be evaluated.

8) Alternate Weather Minimums. Alternate weather minimums will be those listed in the certificate holder's OpSpec paragraph C055. These minimums must reflect the current requirements of § 121.625 or § 135.221, as applicable. Although no consideration is given for the use of Global Positioning System (GPS)/Area Navigation (RNAV) approaches, certificate holders may obtain authorization to use these approaches from the FAA, who will authorize the approaches in the certificate holder's OpSpecs.

9) Communications. The certificate holder must have a communications system in place that complies with § 121.99, 121.123, or 135.165, as applicable. The communication system is usually two-way very high frequency (VHF) radio, but alternate means such as VHF

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data link, high frequency (HF) voice or high frequency data link (HFDL), or the certificate holder might substitute a satellite communication (SATCOM) if approved by the CHDO. Refer to MEL considerations, limitations, and restrictions in accordance with § 135.165 for part 135 operations.

NOTE: Currently the regulations do not permit SATCOM for North Atlantic Operations (NAT/OPS).

10) Navigation. The certificate holder must show the availability of navigation facilities adequate for the operation, taking into account the navigation equipment installed on the airplane, the navigation accuracy required for the planned route and altitude of flight, and the routes and altitudes to the airports designated as ETOPS alternates.

11) Dispatch or Flight Release (Part 121 Only). For all ETOPS operations, the dispatch or flight release must list all ETOPS alternates and the planned ETOPS diversion time under which the flight is dispatched or released. (Sections 121.687 and 121.689.)

a) The FAA grants approval to conduct ETOPS greater than 180 minutes. In selecting ETOPS alternate airports, the certificate holder must make every effort to plan ETOPS with maximum diversion distances of 180 minutes or less, if possible. If conditions necessitate using an ETOPS alternate airport beyond 180 minutes, the route may be flown only if the requirements for the specific operating areas contained in part 121 appendix P, § 1, paragraph (h) or (i) are met.

b) Two-hundred-and-seven-minute ETOPS in the North Pacific (NOPAC) area of operation and 240-minute ETOPS in the North Polar Area of the NOPAC, north of the equator, may be granted by the FAA as an exception that may be used on a flight-by-flight basis. This exception may only be used when an ETOPS alternate airport is not available within 180 minutes.

NOTE: In accordance with § 121.633(b), any operation that is authorized beyond 180 minutes must be approved in accordance with the aircraft time-limiting systems, corrected for wind and temperature. In addition, the airplane must remain within the ETOPS-authorized diversion time from an adequate airport that is RFFS-equivalent to International Civil Aviation Organization (ICAO) Category 7 or higher.

c) The certificate holder must inform the flightcrew each time an airplane is proposed for dispatch for greater than 180 minutes and tell them why the route was selected. The reason for the route selection must be included in, or attached to, the dispatch or flight release.

NOTE: AC 120-42, paragraph 303c8 should be reviewed for the specific criteria required for ETOPS operations greater than 180 minutes.

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12) Public Protection.

a) Protection from the Elements. If the certificate holder is applying for ETOPS operations beyond 180 minutes and for operations in the North Polar Area and South Polar Area, dispatch/flight release policies and procedures must be included for facilities at each airport, or in the immediate area, sufficient to protect the passengers and cargo from the elements.

b) Passenger Recovery Plan. The certificate holder must provide training to flightcrew members and dispatchers relative to their perspective roles in the certificate holder's passenger recovery plan.

13) Potential Diversion Airports After Departure. The certificate holder must demonstrate that the pilot, dispatcher (domestic and flag operations), or the person authorized to exercise operational control (supplemental operations), typically known as a flight follower, is able to monitor the airports within the ETOPS area of operation.

a) The certificate holder must make information regarding weather, airport field conditions, and airport facilities readily available and should communicate this information to the pilot in command (PIC) in the event changes in these conditions would render an airport unsuitable for landing. For certificate holders operating under part 121 domestic or flag rules, this information will be communicated to the flightcrew by a dispatcher. For certificate holders operating under part 121 supplemental rules, this information will typically be communicated by a person authorized to exercise operational control by the certificate holder.

b) Prior to reaching the EEP, the PIC and the dispatcher or flight follower must ensure the capability and availability of all en route alternates to support any en route contingencies. Weather from the earliest to latest time of arrival (TOA) at an ETOPS alternate as well as the landing distances, airport services, and facilities must be evaluated. If changes to any of these conditions since the time of departure would preclude a safe approach and landing, the dispatcher or flight follower will notify the PIC and will select a new ETOPS alternate where a safe approach and landing can be made.

14) Emergency Conditions. PIs will ensure the following emergency conditions are simulated during the ETOPS validation flights:

a) Total loss of thrust of one engine (throttle at idle),

b) Total loss of engine-generated (or normal) electrical power,

c) Any other condition considered more critical in terms of airworthiness, crewmember workload, or performance risk.

NOTE: The critical scenario will result in an actual diversion to an alternate airport. Planned diversions must be coordinated with the applicable air traffic control (ATC) facility.

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d) For a part 121 domestic and/or flag certificate holder, if a scenario requires the changing of en route alternates, a dispatcher must issue a new dispatch release. If the flight is en route, a dispatcher must communicate this revised release by voice or data link to the PIC for concurrence. If the flight is on the ground, the dispatcher may use any approved method to transmit flight documentation to deliver the amended release. The revised release should have current weather and any appropriate information for the new ETOPS alternate to it.

15) Diversion and Failure Scenarios. PIs should be sure that there was an assessment of scenarios for system failure and partial system failure. The CHDO should also include other diversion scenarios such as medical emergencies, onboard fire and loss of pressurization, or security threats.

16) Air Operator Certificate (AOC). Whenever the certificate holder conducts a flight to a destination outside the United States, PIs should ensure that the aircraft has an original, certified copy of the AOC on board the aircraft as required by ICAO Annex 6.

B. After Flight Reviews (Parts 121 and 135). After the conclusion of each validation flight, the CHDO and the certificate holder should conduct an in-depth review of the flight. All active participants in the validation flight should participate in the review. If there are any areas of concern to the CHDO regarding the conduct or operation of the flight, the certificate holder must offer remedies prior to initiation of the next validation flight or final approval process.

4-1036 AUTHORIZATION TO CONDUCT ETOPS OPERATIONS.

A. CHDO Recommendation. As stated earlier in this chapter, the CHDO determines the final decision on whether the certificate holder has demonstrated the appropriate qualifications to receive ETOPS authorization. The CHDO will make a recommendation through their region to HQ for approval to issue the applicable OpSpecs.

B. Heightened Surveillance. After the above affirmative recommendations, the Office of the Director (AFS-1) authorizes the issuance of the OpSpec by the CHDO. The CHDO initially completes this via e-mail, with a follow-up letter by mail. The CHDO issues the appropriate OpSpecs paragraphs. Although the certificate holder now has the authority to begin ETOPS revenue flights, heightened surveillance by the CHDO will continue for 6 months.

4-1037 ISSUE OPSPEC PARAGRAPH B342 AND B344, ETOPS UNDER PARTS 121 AND 135 (AS APPLICABLE).

A. ETOPS Authority. The FAA may grant a certificate holder the authority to conduct ETOPS in accordance with part 121 appendix P and § 121.161 or part 135 appendix G and § 135.364. Authority to conduct ETOPS is granted through the issuance of OpSpecs. OpSpec paragraph B342 is issued to certificate holders who have been granted approval to conduct ETOPS with two-engine airplanes, and OpSpec paragraph B344 is issued to certificate holders who have been granted approval to conduct ETOPS with passenger-carrying airplanes with more than two engines.

NOTE: For further information regarding the actual issuance of OpSpecs B342 and B344, see Volume 3, Chapter 18, Section 4.

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B. Additional OpSpecs. In addition to the ETOPS OpSpecs, the type of operation conducted may require additional OpSpecs, such as:

- B036 for Class II Navigation, B037 if the operation involves Central East Pacific (Airspace) (CEPAC).
- B038 if the operation involves NOPAC airspace.
- B039 if the operation involves NAT/MNPS airspace.
- B040 if the operation involves AMU.
- OpSpec B043 and/or OpSpec B044 if the certificate holder has authorization to use these fuel reserves in ETOPS.
- If the operation involves transatlantic flight in the NAT, these operations can also receive authorization under B041 if the capabilities of the aircraft permit NAT/OPS under the 60-minute rule.
- B055 for north polar operations.

4-1038 ISSUE OPSPEC PARAGRAPH D086 (MAINTENANCE) FOR PARTS 121 AND 135.

A. OpSpec Paragraph D086. OpSpec paragraph D086 contains information on the aircraft, authorized diversion time in minutes, their maintenance programs, and the Configuration Maintenance Procedures (CMP) documents (as applicable) for the airplanes the certificate holder will use in parts 121 and 135 ETOPS.

B. Table 1. Table 1 from OpSpec paragraph D086 contains information that identifies the aircraft and the number of minutes authorized diversion time.

Table 1

Registration No.	**Airplane M/M/S**	**Maximum Diversion Time In Minutes**
Enter the "N" number of the authorized aircraft; i.e., **N123AB**	Enter the Make, Model, and Series of this aircraft; i.e., **B-767-332**	Enter the authorized maximum diversion time, in minutes; i.e., **180**

C. Table 2. Table 2 from OpSpec paragraph D086 contains information about the maintenance and reliability programs for each make, model, and series (M/M/S) of aircraft and engine combination used in ETOPS service.

NOTE: Each M/M/S may have several documents listed. For part 135, the program date is the revision FAA approval date of the document. For more information, see Volume 4, Chapter 6, Section 3, paragraph 4-1060.

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Table 2

Airplane M/M/S	Program Name	Program Number	Program Date	Powerplant M/M/S	Program Name	Program Number	Program Date
Enter airplane M/M/S; i.e., **B-767-332**	Enter the name of the maintenance and/or reliability program for this M/M/S; i.e., **CAMP**	Enter the program number if applicable; i.e., **D003561**	Enter the current revision date for this document; i.e., **10/21/08**	Enter Engine M/M/S for this aircraft; i.e., **PW4060**	Enter the name of the maintenance and/or reliability program for this engine M/M/S; i.e., **CAMP**	Enter the program number if applicable; i.e., **D003561**	Enter the current revision date for this document; i.e., **10/21/08**

D. Table 3. Table 3 from OpSpec paragraph D086 identifies the CMP documents that may be applicable to the aircraft/engine combination. These documents include non-optional service information such as Service Bulletins (SB), Service Letters (SL), manual revisions, etc., that must be incorporated into the aircraft and Continuous Airworthiness Maintenance Program (CAMP) prior to entry into ETOPS service.

NOTE: Part 135 aircraft may not have an applicable CMP document. In these cases, enter "NONE" in the "FAA-approved CMP Document Name/Number" block, leaving the rest of the blocks blank.

Table 3

Airplane M/M/S	Powerplant M/M/S	FAA-Approved CMP Document Name/Number	Document Date	FAA-Approved Amendment No.
Enter airplane M/M/S; i.e., **B-767-332**	Enter engine M/M/S for this aircraft; i.e., **PW4060**	Enter the applicable CMP document number or name for the listed airplane-engine combination (if applicable); i.e., **D003561**	Enter the current revision date for this document; i.e., **10/21/08**	Enter the FAA-approved amendment No. for the document; i.e., **P**

E. Certificate Holders with Existing ETOPS Authority.

1) Recognize that once a certificate holder has authorization to conduct ETOPS, procedures and systems should be in place to support any additional ETOPS authority. Therefore, the application package for a certificate holder who is experienced in ETOPS and who is requesting a new aircraft/engine combination, a change to their existing authorization (120 minutes to 180 minutes), or a new geographic area of operation may not need to be as complex as an application package from a certificate holder who has never held ETOPS

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authority. The CHDO will determine the necessary level of complexity with the concurrence of the respective RO and HQ.

2) For certificate holders with existing ETOPS authority wishing to add a new ETOPS destination, an inspection of the new ETOPS station/facility must be conducted by an Airworthiness inspector from the CHDO no later than 90 days after initial start-up. Additionally, for existing ETOPS stations that have never had a facility inspection or have not had an inspection within the last 24 months, a station/facility inspection by an Airworthiness inspector and, if appropriate, an operations inspector, should be conducted within 120 days of issuance of this guidance. For part 121 certificate holders, the CHDO should schedule and complete ATOS EPI 5.1.8 AW and 5.1.8 OP if appropriate, within the specified time periods. For part 135 ETOPS certificate holders, document this inspection using PTRS activity code 4633, 6644, or 1634, as appropriate. The CHDO should make every effort to schedule complementary inspections during the same station/facility visit. For example, also conduct contract maintenance, fuel facility, CAMP requirements inspections, etc., as applicable.

NOTE: Additional information is available in AC 120-42 and AC 135-42 depending on the type of operation requested.

RESERVED. Paragraphs 4-1039 through 4-1053.

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VOLUME 5 AIRMAN CERTIFICATION

CHAPTER 2 TITLE 14 CFR PART 61 CERTIFICATION OF PILOTS AND FLIGHT INSTRUCTORS

Section 10 Conduct a 14 CFR Part 125 Pilot Competency or Instrument Proficiency Check

5-466 PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) ACTIVITY CODES.

A. Initial Operating Experience: 1356.

B. Surveillance: 1641, 1642, 1643, 1644, 1645.

5-467 OBJECTIVE. The objective of this task is to determine if an airman is qualified as a pilot in command (PIC) or second in command (SIC) for Title 14 of the Code of Federal Regulations (14 CFR) part 125 operations or to determine that the PIC is proficient in flight solely by reference to instruments. Successful completion of this task results in an indication of satisfactory or unsatisfactory on Federal Aviation Administration (FAA) Form 8410-1.

5-468 GENERAL. The principal operations inspector (POI) is responsible for checking pilot competency or instrument proficiency. The POI may conduct the test or may assign a qualified aviation safety inspector (ASI) to perform the actual check. If the certificate holding district office has no qualified ASI, the district office manager must coordinate with the region to obtain the services of a qualified ASI.

5-469 COMPETENCY CHECKS AND PROFICIENCY CHECKS. Title 14 CFR part 125, § 125.287 requires that part 125 operators or applicants for a part 125 certificate test pilots on initial employment and on a recurrent basis annually (competency checks). Furthermore, pilots acting as PIC must demonstrate instrument proficiency on a six-month basis (§ 125.291). The steps necessary to perform a competency or a proficiency check are very similar. The instrument proficiency check (IPC) also counts for the competency check; however, the competency check does not meet the requirements for the IPC. Either check may be conducted by an appropriately rated inspector or by an authorized check airman.

5-470 CREWMEMBER TESTS AND CHECKS: GRACE PROVISIONS. Grace provisions provide an operator with flexibility in scheduling crewmembers for flight checks. During the grace period, a crewmember can continue to perform pilot duties. A crewmember who completes the test or flight check in the calendar month before or after the calendar month in which it is required is considered to have completed that test or check in the calendar month in which it is required. Subsequent checks will be scheduled on the basis of the original due date. The following are examples of 6-month instrument and annual grace periods:

A. Six-Month Checks.

- Checks scheduled: December 2007 and June 2008.
- Actual checks: 12 December 2007 and 1 May 2008.
- Next check due: December 2008 and June 2009.

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B. Annual Checks.

- Checks scheduled: January 2007 and January 2008.
- Actual checks: January 2007 and December 2007.
- Next check due: January 2009 and January 2010.

C. Acceptance of Air Carrier Proficiency Checks (§ 121.441) for Part 125 Operations. A pilot proficiency check conducted under 14 CFR part 121 would be accepted as meeting the requirements for operations conducted under part 125, under specified conditions. A pilot proficiency check conducted in accordance with Appendix F of part 121 may be accepted as meeting the requirements for operations conducted under part 125 if the following criteria have been met:

1) The check is conducted in the same type of airplane or in an airplane simulator or other training device, approved under § 125.297 for each flight maneuver or procedure to be accomplished during the proficiency check.

2) The pilot has passed a written or oral test on the appropriate provisions of 14 CFR parts 61, 91, and 125, and the operations specifications (OpSpec) and manual of the certificate holder (§ 125.287(a)(1)).

3) A properly documented record of that crewmember is maintained in accordance with the requirements of § 125.401.

D. Lateral Moves. Flight crewmembers who meet the initial and recurrent pilot testing requirements or the PIC instrument proficiency requirements of part 125 are permitted to make lateral moves between operators. For example, a pilot may provide services to more than one operator if the pilot meets the requirements of § 125.287(a)(1) for each certificate holder. However, if a pilot fails to meet this requirement for one operator, that pilot may not provide the same services to any operator. Additionally, a failure of the required competency or proficiency check under part 125 requires notification of any part 121 or other part 125 operators who may employ the pilot. This can be accomplished by notifying the certificate-holding district offices (CHDO) of other operators.

E. Simulator Checks. Portions of a check required by either § 125.285, § 125.287, or § 125.291 may be given in an FAA-approved aircraft simulator or training device. Before the simulator or training device is approved, the operator must demonstrate the accuracy to which the aircraft simulator or training device reproduces the aircraft flight characteristics necessary for the specific items to be checked. In order to ensure the proper update of the simulator, inspectors should be alert to any changes in the operator's aircraft configurations which affect performance of flight crew procedures. The operator should also provide written maintenance procedures which will assure that the simulator or training device will continue to reproduce the aircraft flight characteristics accurately. Evaluation and approval of aircraft simulators are conducted by a simulator team in accordance with the current edition of advisory circular (AC) 120-40, Airplane Simulator Qualification.

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F. Record of Crew Tests and Checks. Inspectors and check airman should record the results of all knowledge and flight tests on FAA Form 8410-1, Airman Proficiency/Qualification Check, upon completion of the test.

5-471 COMPETENCY FLIGHT CHECK JOB AID. The job aid for a competency flight check is found in Figure 5-47. It is used to assure all areas required by § 125.287 are covered. FAA Form 8410-1, Airman Proficiency/Qualification Check, is used to determine which specific maneuvers are to be performed and to indicate whether the maneuvers are satisfactory, unsatisfactory, or waived. The objective standards for the maneuvers are found in either the commercial pilot practical test standards (PTS) or the airline transport pilot (ATP) PTS and the Type Rating Flight Test Guide, as appropriate. When using Figure 5-47 as a job aid, consider the following information.

A. Use of Checklists. The inspector must note that the flight crewmembers not only use all appropriate checklists but also adhere to their provisions.

B. Crew Coordination. The emphasis is on adherence to company procedures included in the procedures and policies manual and accepted cockpit management methods.

C. Takeoffs. Takeoffs, for the purpose of the competency check, begin when the airplane is taxied into position on the runway to be used.

1) Crosswind takeoffs should be considered only when meteorological, airport, and traffic conditions allow them to be done safely. If not, crosswind technique can be discussed during the oral or written portion of the check.

2) The takeoff with a simulated failure of the most critical engine may be performed in a non-visual simulator. When to induce the powerplant failure is up to the judgment of the inspector, given the airplane type and the prevailing conditions. (See the job aid)

3) The rejected takeoff may be performed during a normal takeoff roll after reaching a reasonable speed. A reasonable speed is determined by considering airplane characteristics, runway length, surface conditions, wind direction and velocity, brake energy limits, and any other pertinent factors that may adversely affect safety. This speed should be no more than 50 percent of the takeoff decision speed (V_1).

D. Inflight Maneuvers.

1) Steep turns must be performed at a bank angle of 45°. The turn must be at least 180° and not more than 360°.

2) For the purpose of the check, the required approach to a stall is reached when there is a perceptible buffet or from activation of stall warning devices (stick shaker or pusher). Where the airplane uses only a zero-flap takeoff configuration, stalls in the takeoff configuration may be omitted. At the discretion of the person conducting the check, one approach to a stall can be performed in one of the configurations while in a turn with a bank angle between 15° and 30°. If the certificate holder is authorized to operate the airplane with any stall warning device or indicator inoperative, the device or indicator may not be used during this maneuver.

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E. Flight Characteristics Peculiar to the Airplane Type. Proper control of airspeed, configuration, direction, altitude, and attitude must be in accordance with procedures and limitations in the FAA-approved Aircraft Flight Manual, the operator's policies and procedures manual, checklists, or other approved material appropriate to the airplane.

F. Powerplant Failures. In addition to the specific maneuvers to be demonstrated with an inoperative powerplant, the person conducting the check may require a simulated powerplant failure at any time during the check.

G. Landings. At least two actual landings are required, but the conditions may be combined as appropriate.

1) Crosswind landings may be conducted only if existing meteorological, airport, and traffic conditions allow. If not, discussion of the technique can be included in the oral or written portion of the check.

2) The following are conditions for maneuvering to a landing with simulated powerplant failure:

a) In the case of three-engine airplanes, a procedure that approximates the loss of two powerplants (center and one outboard) or,

b) In the case of other multiengine airplanes, a simulated failure of 50 percent of available powerplants with the simulated power loss on one side of the airplane (not to be done on a circling approach).

3) The landing that is rejected must be approximately 50 feet above the runway and approximately over the runway threshold.

H. Normal and Abnormal Procedures. The pilots being tested must demonstrate the proper use of as many systems and devices as the person conducting the check finds are necessary to indicate the required proficiency. A rejected landing may be combined with instrument circling approach or missed approach procedures.

I. Emergency Procedures. The pilots being tested must demonstrate the proper emergency procedures for as many of the possible emergency situations as the person conducting the check finds are necessary to indicate adequate knowledge and skill. If any emergency situations cannot be simulated, include these procedures in the oral or written portion of the test.

5-472 INSTRUMENT PROFICIENCY FLIGHT CHECK JOB AID. The job aid for an IPC is found in Figure 5-48 It is used to assure all areas required by § 125.291 are covered. FAA Form 8410-1, Airman Proficiency/Qualification Check, is used to determine which specific maneuvers are to be performed. The objective standards for the maneuvers are found in the instrument rating PTS, as appropriate. When using Figure 5-48 as a job aid, consider the information in paragraphs 5-471A through I above and the following.

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A. Instrument Procedures.

1) During area departure and area arrival procedures, the PIC must adhere to actual or simulated air traffic control (ATC) clearances, including assigned radials, and must properly use available navigation facilities.

2) Entering, maintaining, and leaving holding patterns may be performed in connection with either area departure or area arrival.

B. Instrument Approaches.

1) The simulated powerplant failure for a manually-controlled instrument landing system (ILS) approach should be initiated before intercepting the final approach course. The simulated failure must continue to touchdown or throughout the missed approach procedure.

2) Non-precision approaches must be representative of the types of approaches the operator is likely to use.

3) Each instrument approach must be performed according to the prescribed instrument approach procedure and within the limits specified for the procedure.

4) The instrument approach begins when the airplane is over the initial approach fix for the approach procedure being flown (or when turned over to the final approach controller in the case of a ground-controlled approach). The approach ends when the airplane touches down on the runway or when transition to a missed approach configuration is initiated.

5) Instrument conditions should not be simulated below 100 feet above the touchdown zone.

C. Circling Approaches. At least one circling approach must be made under the following conditions:

1) The portion of the approach to the authorized minimum circling approach altitude must be made under actual or simulated instrument conditions. Control of the airplane by visual references should take effect at the point where the airman would normally have visual contact with the airport during reduced visibility operations.

2) The approach must be made to the authorized minimum circling approach altitude followed by the necessary maneuvering (by visual reference) to maintain a flight path that permits a normal landing on a runway at least 90° from the final approach course of the simulated instrument portion of the approach.

3) The circling approach must be performed without excessive maneuvering and without exceeding the normal operating limits of the airplane. The bank angle should not exceed 30°.

4) In the case where an operator's OpSpecs do not authorize circling approaches, this maneuver may be omitted.

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D. Missed Approaches. A complete missed approach procedure must be accomplished at least once. At the discretion of the person conducting the check, a simulated powerplant failure may be required during any of the missed approaches.

E. Landings.

1) When landing from an ILS approach, except when circumstances beyond the control of the pilot prevent an actual landing, the inspector conducting the check may accept an approach to a point where, in the inspector's judgment, a landing to a full stop could have been made.

2) A landing under actual or simulated circling approach conditions is not specifically required if circumstances beyond the control of the pilot prevent a landing. The inspector conducting the check may accept an approach to a point where, in the inspector's judgment, a landing to a full stop could have been made.

F. Rejected Landings. The rejected landing, including a normal missed approach procedure, may be accomplished to approximately 50 feet above the runway and approximately over the runway threshold. This maneuver may be combined with instrument circling or missed approach procedures, but instrument conditions need not be simulated below the circling minimums.

5-473 PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. This task requires knowledge of regulatory requirements in part 125, FAA policies, and qualification as an ASI (Operations).

B. Coordination. This task may require coordination with the operations unit supervisor, the POI, and possibly the region.

5-474 REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions):

- Title 49 of the United States Code (49 U.S.C.)
- Title 14 CFR Part 61, §§ 61.43, 61.65(g), and 61.127(a).
- AC 61-89, Pilot Certificates: Aircraft Type Ratings.
- AC 125-1, Operations of Large Airplanes Subject to Federal Aviation Regulations Part 125.
- Appropriate PTS.
- An applicant's proposed OpSpecs or an operator's approved OpSpecs.

B. Forms:

- FAA Form 8000-36, Program Tracking and Reporting Subsystem Data Sheet.
- FAA Form 8410-1, Airman Proficiency/Qualification Check.

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C. Job Aids:

- Figure 5-47, Competency Flight Check Job Aid.
- Figure 5-48, Instrument Proficiency Flight Check Job Aid.
- Sample letters and figures.

5-475 PROCEDURES.

A. Request for Competency/Proficiency Check Received. The request for a competency or instrument proficiency check may be received from an applicant for a part 125 certificate or an existing operator.

B. Schedule the Check. Based on inspector workload and district office requirements, schedule the date, place, and time of the check (POI).

C. Examine Certificates of Airman To Be Checked. Determine if the airman holds appropriate and current pilot and medical certificates for part 125 operations (§§ 61.123 or 61.151 and §§ 125.281 and 125.283). Determine which operators employ the pilot.

1) If the pilot does not present the appropriate and current certificates, advise the pilot that the check cannot be administered. Advise the company in writing of the reasons why the check was not administered. (See Figure 5-49)

2) If the pilot has the appropriate and current airman and medical certificates, conduct the knowledge portion of the test.

D. Conduct the Knowledge Portion of the Test.

1) For a competency test, ensure that the oral or written test includes the items listed in § 125.287(a).

2) For an instrument proficiency test ensure that the oral or written test includes the items in § 125.291(c).

3) If the pilot does not correctly answer at least 70 percent of the test questions:

a) Advise the pilot of the test failure.

b) Fill in appropriate boxes on FAA Form 8410-1 and forward a copy to the company. Place the original in the district office file on the operator or applicant.

4) If the pilot correctly answers 70 percent or more of the test questions:

a) Advise the pilot that the knowledge portion of the test is satisfactory.

b) Proceed with the flight portion of the check.

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E. Conduct the Flight Check.

1) For the competency flight check:

a) Observe the pilot conduct a walk-around inspection. Ensure that the inspection is in accordance with the FAA-approved flight manual or the company procedures and policies manual.

b) Ensure that the check includes the maneuvers and procedures outlined in the competency flight check job aid Figure 5-47).

2) For an instrument proficiency flight check:

a) Observe the pilot conduct a walk-around inspection. Ensure that the inspection is in accordance with the FAA-approved flight manual or the company procedures and policies manual.

b) Ensure that the check includes the maneuvers and procedures outlined in the instrument flight check job aid (Figure 5-48).

F. Evaluate the Pilot's Performance. Base your decision on the pilot's performance of each required maneuver, as per § 61.43. Any item checked unsatisfactory on FAA Form 8410-1 constitutes a failure of the entire flight check. Use the appropriate PTS.

1) If the pilot failed the flight check:

a) Debrief the pilot on the reasons for failure.

b) Complete FAA Form 8410-1 indicating reasons for disapproval.

c) Send a copy of the completed form to companies that employ the pilot. Keep the original in the district office file for the operator or applicant.

d) If the pilot is also employed by another air operator, air carrier, or air agency, notify their CHDO.

2) If the pilot passed the flight check:

a) Debrief the pilot, emphasizing the good points and indicating areas that were satisfactory but marginal.

b) Complete FAA Form 8410-1 indicating approval. Make a logbook endorsement, if desired.

c) Enter pilot's authorizations in "Remarks" block (See Figure 5-47 for competency check and Figure 5-48 for proficiency check).

G. PTRS. Complete and close PTRS.

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5-476 TASK OUTCOMES. Completion of this task results in either:

- A completed FAA Form 8410-1 indicating satisfactory performance on the competency or proficiency check and including any appropriate authorizations; or
- A completed FAA Form 8410-1 indicating unsatisfactory performance on the competency or proficiency check.

5-477 FUTURE ACTIVITIES.

- The records of any pilot checked will be reviewed as part of future surveillance.
- The pilot may return for subsequent competency or proficiency checks.
- The inspector may initiate an enforcement investigation, as appropriate, if the pilot is involved in an accident, incident, or possible violation of regulations.
- Possible reevaluation under 49 U.S.C.

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Figure 5-47. Competency Flight Check Job Aid

COMPETENCY FLIGHT CHECK JOB AID

Pilot's Name _____ Company _____	
Date _____ Inspector _____	
The competency flight check should consist of the pilot's demonstration of the following:	
Item:	Completed
Preflight	
Proper communication with Air Traffic Control	
Actual use of and adherence to the: o Prestart checklist	
o Appropriate control system checks	
o Starting procedures	
o Radio and electronic equipment checks	
Selection of proper navigation and communications radio facilities before and during flight.	
Satisfactory crew coordination/cockpit management.	
Taxiing procedures in compliance with instructions issued by the appropriate air traffic control authority or by the person conducting the check.	
Powerplant check appropriate to the airplane type.	
Takeoffs, including: o At least one normal takeoff	
o At least one crosswind takeoff	
o At least one takeoff with a simulated failure of the most critical powerplant -- - After V_1 and before V_2 or	

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Page Two	
Item:	Completed
- When V_1 and V_2 or V_1 and V_r are identical, as close as possible after V_1, or	
- No more than 50% of V_{mc}, and	
- In any case, before reaching 200 feet AGL	
o At least one rejected takeoff.	
Inflight maneuvers, including: o At least one steep turn in each direction	
o At least three approaches to stalls -- - One in the takeoff configuration	
- One in a clean configuration	
- One in the landing configuration	
o Recovery from specific flight characteristics peculiar to the airplane type.	
o Simulated powerplant failures, if desired.	
At least two actual landings (one to a full stop). The following may be combined -- o Normal landing	
o Crosswind landing, if practical	
o Maneuvering to a landing with simulated powerplant failure	
o One rejected landing	
Normal and abnormal procedures for -- o Anti-icing and de-icing systems	
o Autopilot systems	
o Automatic or other approach aid systems	

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Page Three	Completed
o Stall warning devices, stall avoidance devices, and stability augmentation devices.	
o Airborne radar devices	
o Hydraulic and electrical system failures and malfunctions	
o Landing gear/flap system failure/malfunction	
o Failure of navigation or communication equipment	
o Any other systems, devices, or aids available	
Emergency procedures -- o Fire in flight	
o Smoke control	
o Rapid decompression	
o Emergency descent	
o Any other emergency procedures outlined in the appropriate FAA approved airplane flight manual	
REMARKS:	

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Figure 5-48. Instrument Proficiency Flight Check Job Aid

INSTRUMENT PROFICIENCY FLIGHT CHECK JOB AID

Pilot's Name _____ Company _____

Date _____ Inspector _____

The instrument proficiency flight check should consist of a demonstration of at least the following.

Item:	Completed
Preflight	
Proper communication with Air Traffic Control	
Actual use of and adherence to the: o Prestart checklist	
o Appropriate control system checks	
o Starting procedures	
o Radio and electronic equipment checks	
Selection of proper navigation and communications radio facilities before and during flight.	
Satisfactory crew coordination/cockpit management.	
Taxiing procedures in compliance with instructions issued by the appropriate air traffic control authority or by the person conducting the check.	
Powerplant check appropriate to the airplane type.	
Takeoffs, including: o At least one normal takeoff	
o At least one takeoff with instrument conditions simulated at or before reaching an altitude of 100' above airport elevation	
o At least one crosswind takeoff, if practical	
o At least one takeoff with a simulated failure of the most critical powerplant --	

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Page Two	
Item:	Completed
- After V_1 and before V_2 or	
- When V_1 and V_2 or V_1 and V_r are identical, as close as possible after V_1.	
o At least one rejected takeoff.	
Instrument procedures, including -- o Area departure and area arrival	
o Standard methods of entering, maintaining, and leaving holding patterns	
o At least one normal ILS approach	
o At least one manually controlled ILS approach with a simulated failure of powerplant	
o At least one non-precision approach procedure likely to be used by the operator	
o Circling approaches, if operator is approved for circling minimums below 1,000 foot ceiling and 3 miles visibility	
o At least one missed approach from an ILS approach and one additional missed approach	
Inflight maneuvers, including -- o At least one steep turn in each direction	
o Approach to a stall -- - One in the takeoff configuration	
- One in a clean configuration	
- One in a landing configuration	
o Recovery from specific flight characteristics peculiar to the airplane type.	

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Page Three	
Item:	Completed
o Simulated powerplant failures.	
At least two actual landings (one to a full stop) - o A normal landing	
o Landing from an ILS approach	
o Crosswind landing, if practical	
o Maneuvering to a landing with a simulated powerplant failure	
o If the operator is approved for circling minimums below 1,000 feet and 3 miles, a landing under simulated circling approach conditions	
o A rejected landing, including a normal missed approach procedure	
Normal and abnormal procedures for -- o Anti-icing and de-icing systems	
o Autopilot systems	
o Automatic or other approach aid systems	
o Stall warning devices, stall avoidance devices, and stability augmentation devices.	
o Airborne radar devices	
o Hydraulic and electrical system failures and malfunctions	
o Landing gear and flap systems failure or malfunction	
o Failure of navigation or communication equipment	
o Any other systems, devices, or aids available	

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Page Four	
Emergency procedures -- o Fire in flight	
o Smoke control	
o Rapid decompression	
o Emergency descent	
o Any other emergency procedures outlined in the appropriate FAA-approved airplane flight manual	
REMARKS:	

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Figure 5-49. Letter Indicating Pilot Not Qualified

FAA letterhead

[*Operator's name and address*]

Dear _____:

This is to inform you that the [*proficiency or instrument*] check scheduled for [*date*] at [*location*] was not conducted due to Mr./Ms. [*name of airman*] did not qualify.

- [*Cite reasons why airman was not qualified*]
- [*Suggest how each can be corrected*]

If you have any questions or you wish to reschedule the check with the same or a different airman, please contact this office at [*telephone number*].

Signed by: [*by certification project manager (CPM) if initial certification; by POI if an existing operator*]

RESERVED. Paragraphs 5-478 through 5-495.

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VOLUME 5 AIRMAN CERTIFICATION

CHAPTER 10 ADMINISTER A TITLE 14 CFR PART 133 CHIEF PILOT KNOWLEDGE AND SKILL TEST

Section 1 Verify Qualification for External Load Operators

5-1701 PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) ACTIVITY CODE. 1579.

5-1702 OBJECTIVE. The objective of this task is to verify that an applicant for chief pilot of a rotorcraft external-load operation is qualified in aeronautical knowledge and practical experience to conduct an external-load operation safely and according to Title 14 of the Code of Federal Regulations (14 CFR) part 133. Successful completion of this task results in an indication of satisfactory or unsatisfactory.

5-1703 GENERAL.

A. Authority. 14 CFR part 133, § 133.23 requires that a chief pilot designee demonstrate proficiency in knowledge and skill for rotorcraft external-load operations, and describes the maneuvers that must be demonstrated in a skill test for chief pilot. Section 133.21 outlines the ratings and qualifications that a pilot must hold in order to qualify as a chief pilot for external-load operations.

B. Designation. Each part 133 certificate holder is required to designate the chief pilot for rotorcraft external-load operations. The chief pilot may be the applicant. The applicant may also designate a qualified pilot as an assistant chief pilot to perform the functions of the chief pilot when the chief pilot is not available. An assistant chief pilot must meet the same requirements as the chief pilot.

1) Section 133.23 requires that the chief pilot demonstrate proficiency in knowledge and skill for these operations. The inspector may base the determination that the candidate's knowledge and skill are adequate based on the chief pilot's previous experience and safety record in rotorcraft external-load operations. The chief pilot must have previously passed a knowledge and skill test for the same class of rotorcraft external-load operations.

2) The pilot must have passed a knowledge test for the same make and model of rotorcraft to be operated (see 14 CFR § 133.23(b)(3)).

C. Initiation. The operator writes a letter designating the chief pilot, which the chief pilot also signs (Figure 5-191). This letter is sent to the Flight Standards District Office (FSDO).

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Figure 5-191. Sample Letter Designating Chief Pilot

Company Letterhead

[*Date*]

[*Federal Aviation Administration (FAA) address*]

[*Name of company*] hereby designates Mr./Ms. [*name of chief pilot*], holder of pilot certificate number [*enter certificate number*], as chief pilot for rotorcraft external-load class [*enter all appropriate classes*] for this company.

[*Authorized person's signature*]

I hereby accept the duties and responsibilities of chief pilot for rotorcraft external-load class operations conducted by [*name of company*].

[*Chief pilot designee's signature*]

D. When to Administer the Knowledge and Skill Test. The inspector should administer the knowledge and skill test unless the applicant presents evidence that the chief pilot has previously passed the knowledge and skill test. The tests must have been for the same class of external-load and for the same make and model of rotorcraft. Only in rare circumstances would the applicant's previous experience fully satisfy the requirements of § 133.23(d).

E. Inspector Qualifications. The inspector conducting the skill test must be helicopter rated and have experience as an external-load pilot. The inspector may conduct the skill test in the helicopter with the applicant or observe from the ground.

F. Experience, Testing, or Both Must Satisfy § 133.23.

1) To satisfy § 133.23(b)(1) and (2), the inspector may accept a logbook endorsement and/or a letter of competency to conduct rotorcraft external-load operations for the same class for which the operator is applying.

2) To satisfy § 133.23(b)(3), the inspector may accept a logbook endorsement for a knowledge test on the same type of rotorcraft, make and model.

3) To satisfy § 133.23(b)(4), the inspector may accept a logbook endorsement and/or letter of competency if the inspector has personal knowledge that the Rotorcraft-Load Combination Flight Manuals (RLCFM) of the previous operator and this operator are similar.

4) To satisfy § 133.23(c), the inspector may accept a logbook endorsement and/or letter of competency to conduct the same class of rotorcraft external-load operations if the pilot

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has no record of previous accidents, incidents, or violations in rotorcraft external-load operations.

5-1704 EXAMINATION OF THE CANDIDATE. Sections 133.21, 133.23, and 133.37 prescribe the pilot and testing requirements for rotorcraft external-load operators. Logbooks and any previous external-load competency letters must be made available to help determine whether a knowledge and skill test or portion thereof is required. A chief pilot's knowledge and skill test will be conducted by a FAA inspector. The chief pilot or the inspector may conduct the knowledge and skill test for other rotorcraft external-load pilots in the same operation. Although the applicant may elect to be tested by an oral or a written test, the oral test should be encouraged because of the many differences between RLCFM and operations specifications (OpSpecs).

A. Areas to Test. Whether the inspector selects either an oral or a written knowledge test, at least the following areas must be tested:

1) The pilot must be able to describe or answer questions about procedures for preflight of aircraft, attaching means, and personnel lifting devices, if appropriate.

2) The pilot should be able to conduct an accurate survey of the flight areas to be used. The pilot's ability to evaluate and analyze correctly the pickup site, the route, and the landing site must be determined. The pilot should indicate that the routes for the approach to and departure from each site should be over the lowest obstacle and in the direction of the prevailing wind.

3) The pilot should be able to calculate weight and balance with emphasis on a lateral center of gravity (c.g.). The pilot must also correctly describe how to prepare the load, check the rigging, and attach that load to the helicopter.

4) The pilot should be able to identify the different types of webbing, nylon rope, chairs, clevises, and connector links. The pilot should have a general knowledge of the weight lifting capacity of each and the rigging of each.

5) For Class D authorizations, the pilot should know how to operate the personnel lifting device and be aware of its limitations.

6) The pilot must have thorough knowledge and understanding of the performance capability, operating procedures, and limitations of the helicopter to be used. The pilot should be able to calculate the adjusted gross weight performance when the temperature and/or density altitude changes.

B. Communications Test. The pilot must demonstrate an understanding of the ground crew's hand signals, as communication between the flightcrews and ground crews is critical in ensuring the safety of persons on the ground and in the helicopter. Class D authorization requires radio communication among flight and ground crewmembers, and, if appropriate, the pilot must show that he or she is familiar with standard radio phraseology and with phraseology developed for the operation.

1) The pilot must have complete knowledge of all material in the approved RLCFM.

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2) When all the requirements are satisfied, the skill test is conducted. Because of the elaborate preparations and equipment sometimes involved in external-load operations, the inspector may conduct the skill test after failure of the knowledge portion if special circumstances make it necessary. The skill test may only be conducted at this time if the deficient knowledge area is unrelated to the skill test.

C. Skill Test. The pilot must successfully perform flight operations for the appropriate load class in the helicopter for which certification is sought. For the purposes of the skill demonstration, the external-load weight, including the external-load attaching means, must be the maximum weight for which authorization is sought. The inspector can elect to conduct the skill test in the helicopter with the applicant or observe from the ground.

1) For a Class A external-load, the skill test must consist of the following:

a) Before liftoff, the pilot should make a check of security and proper rigging of the load.

b) The rotorcraft and load must be lifted to an appropriate hover altitude where the pilot determines if power is available for takeoff.

c) While at a hover, the pilot must demonstrate that adequate directional control is available by making heading changes of 180° to each side of the proposed takeoff path.

d) The pilot must demonstrate smooth acceleration from a hover into forward, climbing flight. Sufficient power, not to exceed the maximum allowable, must be applied on takeoff to ensure that the aircraft clears the tallest immediate obstacle safely.

e) The pilot must demonstrate horizontal flight at the maximum operational airspeed for the load authorization requested.

f) The pilot must demonstrate normal and steep approaches.

g) For a Class B external-load, the skill test must consist of the following:

h) During preflight, the pilot must demonstrate that both electrical and manual functions of the rotorcraft attachment system operate properly.

i) Before liftoff, the pilot should make a check of security and proper rigging of the load.

j) The pilot must demonstrate pickup of the external-load. The load should be lifted slowly in a vertical ascent until the sling becomes taut and centered. The load is then lifted to an appropriate hover altitude where the pilot determines if power is available for takeoff.

k) While at a hover, the pilot must demonstrate that adequate directional control is available by making heading changes of 180° to each side of the proposed takeoff path.

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l) The pilot must demonstrate smooth acceleration from a hover into forward, climbing flight. Sufficient power, not to exceed the maximum allowable, must be applied on takeoff to ensure that the load clears the tallest, immediate obstacle safely.

m) The pilot must demonstrate horizontal flight at the airspeed for which authorization is requested. As the airspeed is increased, low-density light loads generally tend to shift further aft and may become unstable. When the load is of greater density, more compact, and better balanced, the ride is steadier and the airspeed may be safely increased. Any unstable load may flutter, oscillate, or rotate, resulting in reduced aircraft control and undue stress on the helicopter. A reduction in forward airspeed will usually allow regaining of aircraft control and steadying of the load. If the load begins oscillating fore and aft or fluttering, it is especially important that the helicopter's forward airspeed be reduced.

n) The pilot must maneuver the external-load into the release position and release it, under normal flight conditions, using the normal and, if practicable, emergency release controls.

o) The pilot must demonstrate winch operation if a winch is used to lift the external-loads. The pilot and the winch operator, if appropriate, should each operate the winch during the test. Whenever the cyclic grip switch location or function has been modified, the pilot must demonstrate the ability to actuate the switch in normal operations and simulated emergencies without having to assume an unusual finger or thumb position that may induce unwanted control input.

2) For a Class C external-load the skill test must consist of the following:

3) The pilot must make a preflight check of the electrical and mechanical functions of the rotorcraft's attachment system.

a) The pilot must lift a portion of the load if it is to be dragged, or lift the entire load if it is ballast for a wire stringing operation.

b) The pilot must demonstrate lateral (sideward) flight with proper speed, heading control, and smoothness.

c) If the operator plans on towing (boats, barges), the pilot must demonstrate forward flight.

d) If a winch is installed, the pilot or winch operator must demonstrate its use.

4) For Class D load authorization flight checks, the pilot must demonstrate the same maneuvers as indicated for Class B, including winch operations, if applicable. The test should include picking up a dummy load, moving this load to a predetermined area, and releasing the load under normal circumstances.

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D. Examination Results.

1) Upon successful completion or documentation of the knowledge and skill test, the inspector may endorse the pilot's logbook and may also issue a letter of competency. For convenience, the pilot may carry a certificate of competency instead of a logbook.

2) If the applicant fails a portion of the test, the inspector may use discretion in the handling of the remainder of the exam. The inspector may terminate the test at the point of failure, debrief the pilot on the failed portion, notify the operator of the test results, and schedule a retest within 30 days. The designee would be retested for the portion failed and any parts not completed, if applicable. If the test is retaken after 60 days, the entire skill test must be repeated.

5-1705 CHIEF PILOT RESPONSIBILITIES. The chief pilot's duties include training the other rotorcraft external-load pilots in the operation, maintaining the training and experience records of the other pilots, and conducting the knowledge and skill tests of the other pilots.

A. Delegation of Responsibilities. The operator may designate an assistant chief pilot to conduct the chief pilot's duties in the chief pilot's absence. The assistant chief pilot must meet the same requirements as the chief pilot.

B. Change of Chief Pilot. The holder of a rotorcraft external-load operator certificate must report any change in designation of chief pilot or assistant chief pilot to the certificate-holding district office (CHDO) as soon as the change occurs. The new chief pilot must be designated and comply with § 133.23 within 30 days of the departure of the previous chief pilot. If 30 days expire before the required notification or compliance occurs, the certificate holder must cease operations unless specially authorized by the CHDO.

5-1706 SPECIAL KNOWLEDGE TEST CONSIDERATION. Investigation of helicopter accidents revealed a cyclic grip design feature that may compromise a pilot's ability to jettison an external-load rapidly in an emergency. In one accident during a class b operation, the helicopter, while hovering out of ground effect, attempted to lift a load from a ridgeline in a sling. The pilot unknowingly exceeded the helicopter's capabilities during the pickup, and the helicopter began to descend. The load rolled off the ridge, dragging the helicopter with it. The pilot was unable to jettison the load quickly because the electric release button was located in an awkward position on the top right side of the cyclic. As a result, the helicopter received substantial damage. The operator of the helicopter had modified the cyclic grips of most of the other helicopters in the fleet by moving the electric release switch to a more accessible location on top of the cyclic grip; however, this helicopter had not yet been modified. Thus, the pilot was flying a familiar type of helicopter but one that had a different cargo quick-release switch location. The pilot instinctively relied on past experience and training when reacting to the emergency yet became confused as to the exact location of the quick release switch on the unmodified helicopter. The problem is not unique to rotorcraft used in external-load operations; cyclic grip switch locations and functions differ on many helicopters and can be changed at the option of the operator. Rotorcraft external-load operators should be informed of the confusion associated with the modification of cyclic grip switch locations or functions. Whenever the quick-release location or function on the pilot's primary control (usually the cyclic grip) is modified, operations inspectors shall request external-load operators to have pilots demonstrate

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their ability to activate the switch in normal operations and simulated emergencies without having to assume an unusual finger or thumb position which may induce unwanted control input.

5-1707 PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. This task requires knowledge of part 133 regulatory requirements and FAA policies and qualification as an aviation safety inspector (ASI) Operations. In addition, the inspector should be helicopter rated and have rotorcraft external-load experience.

B. Coordination. This task may require coordination with the airworthiness unit.

5-1708 REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions):

- Title 14 CFR Parts 1, 27, 29, 61, 91, and 133.
- Advisory Circular (AC) 133-1, Rotorcraft External-Load Operations in Accordance with Federal Aviation Regulations Part 133.
- Approved RLCFM.
- Approved Rotorcraft Flight Manual (RFM).
- FAA Form 8400-8, Operations Specifications, if applicable.
- FAA-S-8081-16, Commercial Pilot Practical Test Standards - Rotorcraft.
- PTRS Procedures Manual (PPM).

B. Forms: FAA Form 8710-1, Airman Certificate and/or Rating Application (Figure 5-192).

C. Job Aids. Sample letters and figures.

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Figure 5-192. FAA Form 8710-1, Airman Certificate and/or Rating Application

TYPE OR PRINT ALL ENTRIES IN INK

Form Approved OMB No: 2120-0021

U.S. Department of Transportation
Federal Aviation Administration

Airman Certificate and/or Rating Application

I Application Information ☐ Student ☐ Recreational ☐ Private ☐ Commercial ☐ Airline Transport ☐ Instrument
☐ Additional Aircraft Rating ☐ Airplane Single-Engine ☐ Airplane Multiengine ☐ Rotorcraft ☐ Glider ☐ Lighter-Than-Air
☐ Flight Instructor ____ Initial ____ Renewal ____ Reinstatement ☐ Additional Instructor Rating ☐ Ground Instructor
☐ Medical Flight Test ☐ Reexamination ☐ Reissuance of ____ Certificate ☒ Other Part 133 chief pilot test

A. Name (Last, First, Middle): Ezell, Gary Lee	B. SSN (US Only): 123-45-6789	C. Date of Birth (Mo. Day Year): 07-13-49	D. Place of Birth: Wakefield, Mass.
E. Address (Please See Instructions Before Completing): 1423 Chaptank Terrace	F. Nationality (Citizenship) Specify: ☒ USA ☐ Other ____	G. Do you read, speak and understand English? ☒ Yes ☐ No	
City, State, Zip Code: Ashburn, VA 22011	H. Height: 72 in.	I. Weight: 165 Lbs.	J. Hair: brown
K. Eyes: brown	L. Sex: ☒ Male ☐ Female		
M. Do you now hold, or have you ever held an FAA Pilot Certificate? ☒ Yes ☐ No	N. Grade Pilot Certificate: Commercial	O. Certificate Number: 123456789	P. Date Issued: 4-21-84
Q. Do you hold a Medical Certificate? ☒ Yes ☐ No	R. Class of Certificate: II	S. Date Issued: 1-08-92	T. Name of Examiner: Sigmund A. Sydowski
U. Have you been convicted for violation of Federal or State statutes relating to narcotic drugs, marijuana, or depressant or stimulant drugs or substances ☐ Yes ☒ No			V. Date of Final Conviction
W. Glider or Free Balloon Pilots only: *Medical Statement: I have no known physical defect which makes me unable to pilot a glider or free balloon.*	Signature		X. Date

II Certificate or Rating Applied For on Basis of:

☐ A. Completion of Required Test	1. Aircraft to be used (if flight test required)	2a. Total time in this aircraft ____ hours	2b. Pilot in command ____ hours
☐ B. Military Competence Obtained in	1. Service	2. Date Rated	3. Rank or Grade and Service Number
	4. Has flown at least 10 hours as pilot in command during the past 12 months in the following military aircraft.		
☐ C. Graduate of Approved Course	1. Name and Location of Training Agency or Training Center		1a Certification Number
	2. Curriculum From Which Graduated		3. Date
☐ D. Holder of Foreign License Issued By	1. Country	2. Grade of License	3. Number
	4. Ratings		
☐ E. Completion of Air Carrier's Approved Training Program	1. Name of Air Carrier	2. Date	3. Which Curriculum ☐ Initial ☐ Upgrade ☐ Transition

III Record of Pilot time *(Do not write in the shaded areas.)*

	Total	Instruction Received	Solo	Pilot in Command	Second in Command	Cross Country Instruction Received	Cross Country Solo	Cross Country Pilot in Command	Instrument	Night Instruction Received	Night Take-off/ Landing	Night Pilot in Command	Night Take-off/ Landing Pilot in Command	Number of Flights	Number of Aero-Tows	Number of Ground Launches	Number of Powered Launches	Number of Free Flights
Airplanes																		
Rotor-craft																		
Gliders																		
Lighter than Air																		
Training Device Simulator																		

IV Have you failed a test for this certificate or rating? ☐ Yes ☒ No **Within the Past 30 days?** ☐ Yes ☒ No

V Applicant's Certification — I certify that all statements and answers provided by me on this application form are complete and true to the best of my knowledge, and I agree that they are to be considered as part of the basis for issuance of any FAA certificate to me. I have also read and understand the Privacy Act statement that accompanies this form.

Signature of Applicant: Gary Lee Ezell Date: 3-04-92

FAA Use Only

EMP	REG	D.O.	SEAL	CON	ISS	ACT	LEV	TR	S.H.	SRCH	WRTE		RATING (1)

FAA Form 8710-1 (7-92) Supersedes Previous Edition

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Instructor's Recommendation

I have personally instructed the applicant and consider this person ready to take the test.

Date	Instructor's Signature	Certificate No:	Certificate Expires

Air Agency's Recommendation

The applicant has successfully completed our _____ course, and is recommended for certification or rating without further _____ test.

Date	Agency Name and Number	Official's Signature / Title

Designated Examiner's Report

☐ Student Pilot Certificate Issued *(Copy attached)*

☐ I have personally reviewed this applicant's pilot logbook, and certify that the individual meets the pertinent requirements of FAR 61 for the pilot certificate or rating sought.

☐ I have personally reviewed this applicant's graduation certificate, and found it to be appropriate and in order, and have returned the certificate.

☐ I have personally tested and/or verified this applicant in accordance with pertinent procedures and standards with the result indicated below.

☐ Approved—Temporary Certificate Issued *(Copy Attached)*

☐ Disapproved—Disapproval Notice Issued *(Copy Attached)*

Location of Test (Facility, City, State)	Duration of Test: Ground	Simulator	Flight

Certificate or Rating for Which Tested	Type(s) of Aircraft Used	Registration No.(s)

Date	Examiner's Signature	Certificate No.	Designation No.	Designation Expires

Evaluator's Record For Airline Transport Certificate/Rating Only

	Inspector	Examiner	*Signature*	Date
Oral	☐	☐		
Approved Simulator/Training Device Check	☐	☐		
Aircraft Flight Check	☐	☐		
Advanced Qualification Program	☐	☐		

Inspector's Report

I have personally tested this applicant in accordance with or have otherwise verified that this applicant complies with pertinent procedures, standards, policies, and or necessary requirements with the result indicated below.

☒ **Approved**—Temporary Certificate Issued ☐ **Disapproved**—Disapproval Notice Issued

Location of Test *(Facility, City, State)*	Duration of Test: Ground	Simulator	Flight

Certificate or Rating for Which Tested	Type(s) of Aircraft Used	Registration No.(s)
FAR Part 135 chief pilot test	BHT-206 A	N123BS

☐ Student Pilot Certificate issued

☐ Examiner's Recommendation

☐ ACCEPTED ☐ REJECTED

☐ Reissue or Exchange of Pilot Certificate

☐ Special medical test conducted—report forwarded to Aeromedical Certification Branch, AAM-130

☐ Certificate or Rating Based on

☐ Military Competence

☐ Foreign License

☐ Approved Course Graduate

☐ Other Approved FAA Qualification Criteria

☐ Certificate Issued

☐ Certificate Denied

☐ Instructor ☐ Flight ☐ Ground

☐ Renewal ☐ Approved

☐ Reinstatement ☐ Disapproved

Instructor Renewal Based on

☐ Activity ☐ Training Course

☐ Acquaintance ☐ Test

Training Course (FIRC) Name	Graduation Certificate No.	Date

Date	Inspector's Signature	FAA District Office
4-29-92	Robert H. Hawkins	FAE-FSDO-05

Attachments:

☐ Student Pilot Certificate (copy)

☐ Report of Written Examination

☐ Temporary Pilot Certificate (copy)

☒ Airman's Identification (ID)

Form of ID: Virginia drivers license

Number: 12-3456789

Expiration Date: 3-01-95

☐ Notice of Disapproval

☐ Superseded Pilot Certificate

☐ Answer Sheet Graded

☐ Answer Sheet Graded (Foreign Instrument)

★U.S.GPO:1992-0-343-105/73558

5-1709 PROCEDURES.

A. Application. Have the applicant fill out FAA Form 8710-1 (Figure 5-192) in the following manner:

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1) In Section I, the block labeled "Other" should be checked and "14 CFR Part 133 Test" entered in the blank.

2) Section I, blocks A through V, must be filled out.

3) Section II, blocks A, 1, 2a, and 2b must be completed.

4) Section III should report the applicant's rotorcraft time only.

5) Section IV and V must be completed by the applicant.

6) No instructor endorsement is required.

B. PTRS. Open PTRS file.

C. Review Application. Check the application to ensure that it has been completed properly.

D. Verify Applicant's Identity. Inspect acceptable forms of identification to establish the applicant's identity. Compare the identification with the personal information provided on FAA Form 8710-1 (see Volume 7, Chapter 6, Section 1 of this order).

1) If the applicant's identity can be verified, proceed with the task.

2) If the applicant's identity cannot be verified because of inadequate identification or lack of identification, explain what types of identification are acceptable. Advise the applicant to return with appropriate identification to reapply.

3) If the applicant's identity appears to be different from the information supplied on FAA Form 8710-1, or it appears that an attempt at falsification has been made, do not continue this task (see Volume 7, Chapter 6).

E. Determine Whether Applicant Must Take a Knowledge and Skill Test. Consult the following sources in determining an acceptable level of experience as an alternative to taking all or parts of the knowledge and skill test.

1) Examine the applicant's logbook for experience in rotorcraft external-load operations in the same type rotorcraft conducting the same class of operation.

2) Review a previous letter of competency to verify the applicant's qualifications for the same class of operation, using the same type of rotorcraft.

3) Examine the applicant's military record of external-load experience, if applicable, to determine if it reflects experience in the same type aircraft conducting the same class of operation sought.

F. Enforcement Information System (EIS)/Accident Incident Data System (AIDS) Data. Using office procedures, determine the applicant's accident, incident, and violation history.

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1) If the EIS/AIDS data is negative and a knowledge and skill test is not required,

- Issue the letter of competency (Figure 5-193), and
- Endorse the applicant's logbook (Figure 5-194).

2) If the EIS/AIDS data is negative and a knowledge and skill test is required, conduct the test.

3) If the EIS/AIDS data shows an unexpired enforcement action related to external-load operations, inform the applicant that the test cannot be conducted until the terms of the action are met. Notify the operator in writing (Figure 5-195).

4) Close PTRS.

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Figure 5-193. Sample Letter of Competency

FAA Letterhead

[*Date*]

Chopper Hoppers, Inc.

1234 Main St.

Anytown, US 98765

Dear [*name*]:

This letter of competency is issued to Mr. Kent P. Rice, holder of commercial pilot certificate No. 279420909. On October 21, 1989, Mr. Rice demonstrated satisfactory knowledge and skill to operate as a pilot in command (PIC) for Rotorcraft External-Load Operations. The following aircraft are authorized to be operated by Mr. Rice:

Type	Cargo Class
Bell 206	A, B

[*Principal Operations Inspector's (POI) signature*]

Figure 5-194. Sample Logbook Endorsement

On [*date*], [*name of pilot*], holder of [*certificate grade and number*], satisfactorily demonstrated the knowledge and skill requirements of 14 CFR § 133.37(a)(1).

[*Inspector's signature, including FSDO acronym*]

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Figure 5-195. Letter Advising Operator that Chief Pilot Designee is Not Qualified Because of Existing Enforcement Order

FAA Letterhead

[*Date*]

Rotor-Whirl, Inc.

585 Westview Lane

Pine Tree, GA 31087

Dear Mr. Burkholder:

This letter informs you that [*name of chief pilot nominee*] is ineligible for designation as a chief pilot for 14 CFR part 133 operations.

During a review of [*name of chief pilot nominee*]'s enforcement history, it was determined that [*type of enforcement action and justification for ineligibility*].

Please submit a new chief pilot nominee within 30 days from receipt of this letter.

If you have any questions concerning this matter, please contact this office at [*FSDO's telephone number*].

[*FSDO manager's signature*]

G. Knowledge and Skill Test.

1) Determine the applicant's ability to survey the flight area for obstructions, approach and departure paths, and know the requirements for preparation of a Congested Area Plan (CAP). Present the applicant with a scenario which may include a diagram of a hypothetical flight area, and ask the applicant to answer questions about how to survey that area and to describe the pertinent issues. Present varying meteorological conditions, and have the applicant explain how to conduct the operation under those conditions.

2) Determine whether the applicant knows the proper method of loading, rigging, and attaching an external-load.

a) Loading. Ask the applicant to determine weight and balance. Test the applicant's ability to compute weight and c.g. for the particular class. Provide at least two

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problems. Both problems should test the applicant's ability to compute lateral and longitudinal c.g.. The applicant should be able to determine the actual c.g. of the aircraft. One problem should reflect a situation within the limits of the rotorcraft, and one problem in which the c.g. is outside the limits of the rotorcraft, requiring a shift of weight.

b) Rigging. Ask the applicant how to rig specific loads. Determine if the applicant knows how to rig so that:

- The load is adequately supported and will not accidentally become detached from the rigging;
- The load cannot rotate or swing into tail rotor or main rotor systems of the aircraft; and
- The load is rigged so that if the rigging should happen to fail, the rigging or the load will not become entangled with the rotor systems.

c) Attaching. Ask the applicant to explain how to attach external-load attaching devices that may be installed and/or removed by the pilot. The applicant must explain how to preflight the attachment system and explain how to test the normal and emergency release systems.

3) Determine the applicant's knowledge of performance capabilities and limitations.

a) The applicant must be able to determine if tail rotor effectiveness is adequate when charts are provided by the manufacturer.

b) For Classes B, C, and D, the applicant should be able to determine the maximum load that will permit hovering out of ground effect for the conditions specified by the inspector.

c) Refer to the limitations sections of the approved RFM and the RLCFM to formulate questions regarding limitations. The applicant shall answer the questions from memory.

4) Determine if the applicant knows the proper methods of instructing ground and flight crewmembers. Create scenarios and role play the positions of a flight crewmember and a ground worker. The applicant should be able to instruct the inspector as if the inspector was an actual flight crewmember or ground worker.

5) Determine the applicant's knowledge of the manufacturer's RFM. Determine knowledge of limitations and ability to compute actual performance problems for conditions specified by the inspector.

6) Determine the applicant's knowledge of the RLCFM. Refer to the RLCFM and ask the applicant to demonstrate hand signals and answer questions on other topics that the pilot would have been expected to commit to memory.

7) Determine if the applicant has mastered the following computational skills for each class of operation:

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a) Classes A, B, C, and D, Weight and Balance: Determine if the applicant can calculate the weight and c.g. for the appropriate class. The inspector should provide at least two problems, both of which test the applicant's ability to compute lateral and longitudinal c.g., if appropriate. One problem should be within the limits of both the manufacturer's RFM and the RLCFM. For a problem involving a c.g. location that exceeds the limit, the applicant should be able to compute redistribution of the load in order to bring c.g. within the normal limits.

b) Class C: Test the applicant's knowledge of the negative stability characteristics that occur when the load is in continuous contact with land or water. The candidate should be able to explain the conditions that would aggravate controllability and to explain how to compensate for the negative stability characteristics.

c) Class D: Refer to the appropriate OpSpecs and formulate questions on their content, specifically, authorizations, conditions, and limitations. The applicant should have a working knowledge of the content of the OpSpecs.

H. Results of the Knowledge Test.

1) If the knowledge test is satisfactory, conduct the skill test.

2) If the knowledge test was not satisfactorily completed, inform the applicant and determine whether to conduct the skill test. Notify the company in writing of any deficiencies.

a) Reschedule the knowledge test.

b) Indicate "Disapproval" on the reverse of FAA Form 8710-1. Sign and date the application and then place it in the FSDO file. Do not forward to the Airmen Certification Branch (AVN-760).

I. Skill Test. The applicant should be able to control the rotorcraft to the same standards prescribed in the practical test standards for commercial pilot rotorcraft helicopters. (See FAR 133.23(c) for a complete list of appropriate maneuvers.)

1) The rotorcraft should be loaded to near maximum weight for the conditions.

2) For Class D authorization, conduct the test substituting ballast for human load.

J. Final Examination Results.

1) If the knowledge and skill test is satisfactorily completed, make an appropriate endorsement to the pilot's logbook (Figure 5-194) and issue a letter of competency (Figure 5-195) to the pilot. Specify the class in which the pilot has demonstrated competency.

a) Indicate "Approved" on the reverse of FAA Form 8710-1.

b) Sign and date the application, then place it in the FSDO file. Do not forward to AVN-460.

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2) If the knowledge and skill test is not satisfactorily completed, do not endorse the pilot's logbook to that effect.

a) Indicate "Disapproved" on the reverse of FAA Form 8710-1.

b) Sign and date the application, then place it in the FSDO file. Do not forward to AVN-460.

K. PTRS. Make final PTRS work entry.

5-1710 TASK OUTCOMES. Completion of this task results in one or more of the following.

- Issuance of a letter of competency.
- Endorsement in the pilot's logbook confirming designation as chief pilot, rotorcraft external-load operations, and the class for that operation.
- Written notification to the operator of the test results and a record of that notification.

5-1711 FUTURE ACTIVITIES.

- Retest a pilot who was unsatisfactory.
- Test the applicant again for an additional class authorization.
- Test a new chief pilot for the operator.

RESERVED. Paragraphs 5-1712 through 5-1730.

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VOLUME 5 AIRMAN CERTIFICATION

CHAPTER 11 ADMINISTER A KNOWLEDGE AND SKILL TEST TO AN AGRICULTURAL PILOT

Section 1 Qualify a Pilot in Command

5-1731 PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) ACTIVITY CODE. 1579.

5-1732 OBJECTIVE. The objective of this task is to determine that the pilots used by a private or commercial agricultural aircraft operator are qualified to act as pilot in command (PIC) of an agricultural aircraft. An inspector's completion of this task will result in an indication that the PIC can conduct his job in a satisfactory or unsatisfactory way.

5-1733 GENERAL. When required by Title 14 of the Code of Federal Regulations (14 CFR) part 137, § 137.19(e), the applicant or person who is designated as chief supervisor for the operator will be examined to determine that the applicant possesses satisfactory knowledge to conduct those operations safely. An applicant or chief supervisor acting as PIC under § 137.41(c) may be examined to ensure that the applicant possesses the knowledge required to dispense agricultural materials and chemicals safely. The inspector may take into consideration, when making the determination of competency, any agricultural aircraft pilot state-required tests passed by the applicant. For example, based on a pilot's recent state test, an inspector may determine that a knowledge test is not necessary.

A. Location of Test. The skill test may be conducted over an area mutually agreeable to the applicant and the inspector.

B. Location of Inspector During Test. The operations inspector shall observe this test from the ground. Under no circumstances should the inspector ride with the applicant during the skill test.

C. Flight Helmet. The Federal Aviation Administration (FAA) encourages pilots to wear a U.S. Department of Transportation (DOT) approved or Military Specifications (MIL-SPEC) flight helmet when operating agricultural aircraft in dispensing operations. Although not required by 14 CFR, some aircraft or rotorcraft manufacturers may list helmet use as a requirement in certain Airplane Flight Manuals (AFM) or Rotorcraft Flight Manuals (RFM) or Type Certificate Data Sheets (TCDS).

D. Suitable Material to be Dispensed During Test. For the purpose of the skill test, the aircraft's tanks or hoppers shall be loaded with any suitable material (e.g., water, lime, or sand).

1) Loading shall be to the maximum certificated takeoff weight or the maximum weight established for the special purpose load, whichever is greater. A reduced load may be used based on current environmental conditions.

2) Before conducting the skill test, the operator must ensure that the dispensing equipment does not contain chemical residue (an herbicide or other agricultural chemical) which

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may cause damage or create a hazard to the area where the test is conducted. The inspector must verify this with the operator.

E. Reasons for Conducting Knowledge and Skill Test. This task may be performed during initial certification of a part 137 applicant. It may also be conducted at the request of a part 137 operator or pilot.

F. Not Dispensing Economic Poisons. If the operator does not apply for authorization to dispense economic poisons, the inspector will not test the applicant on § 137.l9(e)(ii) through (iv). The statement of competency issued must reflect this.

5-1734 GUIDANCE FOR THE KNOWLEDGE TEST.

A. Test Development. The examining inspector develops questions from the following topics to determine the applicant's or chief supervisor's knowledge of such operations.

1) The knowledge test may be oral or written, at the option of the person administering the test. A sample written test and its answer key can be found in Figure 5-196, Sample Knowledge Test. This sample should be considered representative of a written test covering the required areas of knowledge.

2) District offices are encouraged to develop their own written tests and answer keys, if they desire to use that method of evaluating the applicant's knowledge. Any written test, whether the sample provided in Figure 5-196 or one developed by the district office, becomes known after it has been administered several times. The test will need to be updated periodically to reflect changes in regulations, new pesticides, etc.

B. State Test Results. Inspectors may accept results of any state or local knowledge test as a portion of the FAA knowledge test, provided the pilot can produce bona fide test results or a license issued by the certifying agency.

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Figure 5-196, Sample Knowledge Test

1. Should a pilot in command (PIC) of an agricultural aircraft assist in mixing and loading the aircraft when dispensing a highly toxic chemical?

2. When dispensing a highly toxic chemical, what instruction would you give your flagger, if one is being used?

3. What are some of the symptoms of chronic toxic effect, which is the cumulative buildup of chemical in the body?

4. How would you dispose of containers that held a toxic poison?

5. Where is the nearest poison control center?

6. If you have mild symptoms of organophosphate poisoning, can you administer the recommended antidote yourself and continue work until an appointment with a doctor can be arranged?

7. What emergency action would you take if a known contamination exists?

8. Indicate your swath runs and procedure turns over the following field, when dispensing a herbicide that could damage plants in the congested area.

{Insert aviation safety inspector (ASI) developed field sketch here.}

9. Would you apply a chemical such as a highly toxic insecticide to this field? If so, how and when?

10. What wind direction would be required for applying a herbicide on the crop in the following field sketch?

{Insert ASI developed field sketch here.}

11. How long should records required by Title 14 of the Code of Federal Regulations (14 CFR) part 137, § 137.71 be kept?

a. 6 months

b. 12 months

c. until the end of the season

d. indefinitely

12. While airborne, before starting your first swath run, what steps would you take?

13. In applying insecticides for insect control adjacent to a lake, stream, or fish-stocked earth tank, what precautions must be taken?

14. Does your agricultural aircraft operator’s certificate allow you to fly under 500 feet over the top or closer than 500 feet horizontal to a farm while going to or from your base of operation and the field you are to treat?

15. What are the steps to be taken before you can dispense chemicals over a city, town, settlement, or other congested area?

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16. Does your aircraft have to be inspected before you can engage in applying insecticide for insect control over a congested area?

17. In your procedure left turn; you misjudge your turn and roll out 300 feet to the right side of your intended course. How would you correct this error?

18. Your agricultural aircraft is required by part 137 to be equipped with a (circle one):

a. quantity tank gauge

b. shoulder harness

c. stall warning horn

d. boom pressure gauge

19. In order to dispense chemicals over a congested area, you are required by part 137 to have your aircraft equipped with which of the following:

a. stall warning horn

b. tank quantity gauge

c. emergency dump valve or chemical jettison device

d. boom pressure gauge

20. {Insert question about the performance characteristics of the aircraft to be flown—such as weight and balance}.

21. What certificate or certificates have to be carried on the aircraft engaged in agricultural aircraft operations?

a. registration

b. facsimile of the agricultural aircraft operator's certificate

c. both of the above

22. You are flying a restricted category agricultural aircraft with a belly unit and two seats. Can you use this aircraft for other purposes than agricultural operations?

23. Are you required to wear a crash helmet during operations?

24. Describe in detail, the dangers involved with a hot, heavy, downwind turn.

25. As your bank increases, what happens to your stall speed?

ANSWER KEY

1. There is no absolutely correct answer to this question. Ideally, the pilot should not be the person who loads the chemical since the danger of contamination is possible. The person should respond in that manner.

2. Walk upwind at all times to avoid the drifting chemicals.

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3. The specific symptoms will vary somewhat with the type of pesticide used. The pilot should also respond that the symptoms can be mistaken for other diseases before chronic toxic effect is suspected and that the effects are cumulative. Generally, the symptoms are nausea, vomiting, blurred vision, excessive sweating, among others.

4. The answer to this question would depend on the chemical in the containers but the important procedure is to read the manufacturer's label. Consult state or local regulations for additional guidance regarding the disposal of empty containers.

5. The answer would have to reflect the local area.

6. No.

7. The answer would depend upon the chemical, the location of the contamination, and any state or local requirements. Again it is important to refer to the manufacturer's label for guidance. Generally, the pilot should wash with soap and water. For small areas, use alcohol.

8. Spray runs and procedure turns should be depicted so that drift and/or aircraft do not overrun the congested area.

9. A less toxic chemical could be used if a substitute is available. If not, spray only when the wind is blowing away from the sensitive area.

10. From the south to the north.

11. b.

12. Survey the area.

13. A definite wind blowing away from streams, lakes, etc. Consult the label to determine if setback zones are recommended.

14. No.

15. Obtain prior written approval from the governing body of the jurisdiction, give public notice of the operation, and obtain an Federal Aviation Administration (FAA)-approved plan.

16. Only the required annual and a 100-hour inspections (unless the annual was completed less than 100 hours prior to the congested area operation).

17. Pull up and reenter the swath run.

18. b.

19. c.

20.

21. b.

22. No.

23. No, it is not required by 14 CFR, but it may be a requirement in some states or when listed as an operating limitation in certain Airplane or Rotorcraft Flight Manuals (AFM/RFM). However, the use of a helmet is recommended by the FAA.

24. As you start your procedure turn downwind.

25. Increases.

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5-1735 OPERATIONAL SAFETY ISSUES WHICH MAY BE DISCUSSED WITH THE APPLICANT. The applicant should be familiar with the following subject areas.

A. Contamination Protection. The applicant should have satisfactory knowledge regarding the methods used to safeguard the pilot against contamination and the safe handling of economic poisons that the pilot dispenses. (An explanation of the relative toxicity of economic poisons lethal dose ($(LD)_{50}$), is included in Volume 3, Chapter 52, Section 1, Introduction to Part 137 Related Tasks.)

1) An aerial applicator pilot who is engaged in the actual application of economic poisons should be knowledgeable of the hazards of the pilot's mixing or loading highly toxic poisons. Special emphasis should be placed on this job function when the economic poison is being used in an undiluted form.

2) The pilot should be able to conduct a ground crew briefing concerning economic poisons and the need to wear protective clothing such as rubber gloves, apron, boots, and a respirator when handling materials that require them. (If a respirator is required, it should be the type which protects the wearer against the particular pesticide being handled.) The pilot should also be able to brief flaggers, when used, concerning the potential hazard of the pesticide being dispensed, and should indicate that they be equipped with appropriate protective equipment.

3) Pilots should also be aware that persons working closely with or handling pesticides should change clothes and bathe at the end of the operation or immediately if pesticide gets on their skin. Clean work clothes should be worn daily.

4) The pilot must be knowledgeable about procedures to prevent contamination of the water sources if water is obtained from streams or ponds for mixing purposes. The pilot must know state and local laws concerning spillage.

5) The pilot should be knowledgeable about how often aircraft and spray equipment should be cleaned, e.g., daily or as often as required to remove accumulation of pesticide residue. When aircraft are cleaned, the pilot should be aware of state and local laws concerning drainage into a sewer, ditch, pond, stream, or other body of water, or the location of approved disposal sites.

B. Container Disposal. The applicant should be knowledgeable about recommended methods for disposing of used pesticide containers. Environmental Protection Agency (EPA) approved methods for disposal are contained on the pesticide label. State and local laws, however, may require additional precautions and it would be useful for the inspector to be aware of them. Local extension agents or an EPA office can be of assistance in this area.

C. Economic Poison Labeling. Economic poisons manufactured for interstate use are required by EPA regulations to be registered with that department. Those poisons must be labeled showing the brand name, active ingredients, inert ingredients, directions for use, warning, net contents, and name and address of manufacturer or registrant. The label normally contains other detailed instructions concerning the effects on plants, animals, and persons. Therefore, when required by § 137.19(e), the applicant must possess a satisfactory knowledge

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concerning the general effects and precautions to be observed as described on the label of the economic poisons normally used in the area where the applicant conducts operations.

D. Detecting Contamination. The requirements contained in § 137.19(e)(1)(iv) should not be interpreted as FAA encouragement or endorsement of self-diagnosis. Rather, it is a requirement that the agricultural pilot possess sufficient knowledge of the primary symptoms of poisoning to motivate seeking immediate professional medical attention when an element of doubt exists concerning contamination.

E. Decontamination Steps. Decontamination should be accomplished in accordance with the manufacturer's labeling and instructions.

F. Poison Control Centers. The location of Poison Control Centers in the United States may be found in the most recent issue of the Directory of Poison Control Centers, a publication from the U.S. Department of Health and Human Services (HHS). A local HHS office may also have a copy. In addition, several chemical hotlines are available for the use of persons handling chemicals. Inspectors may wish to provide these names and telephone numbers to agricultural operators who do not already have them.

1) The National Pesticide Telecommunications Network operates a toll-free hotline, 1–800–858–PEST(7378), which is staffed Monday through Friday, from 7:30 a.m. to 3:30 p.m., Pacific Time. Qualified personnel are available to answer questions about pesticides. Information can be obtained about treatment by a physician after contamination or suspected contamination. The location of the nearest poison control center, cleanup of a pesticide spill, and other related information is also available on the Internet at http://npic.orst.edu/index.html.

2) Chemical Transportation Emergency Center (CHEMTREC) offers emergency phones service 24 hours a day, 7 days a week. In the event of an incident or accident involving pesticides, CHEMTREC is able to provide emergency response information pertaining to chemical spills. In emergency situations, call 1–800–424–9300. For non-emergency, general information or referrals, call 1–800–262–8200. Non-emergency telephones are staffed from 9 a.m. to 5 p.m., Eastern Time, Monday through Friday. They also maintain a Web site at http://www.chemtrec.com.

G. Preflight. In addition to the preflight action required by 14 CFR part 91, § 91.103, the following steps should be taken before starting agricultural aircraft operations:

1) If obstructions to flight include structures, trees, unfavorable terrain, housing areas, etc., and the pilot has not previously or recently worked the particular area, it may be useful to be given a description of the area to be treated by a person familiar with that area and/or conduct a ground survey.

2) A ground survey may be useful when a pilot finds it necessary to fly under wires.

H. Aerial Survey of the Area to Be Treated. When the pilot reaches the vicinity of the target area, he or she should carefully inspect the area from the air.

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1) The area immediately surrounding the working area should be surveyed to determine that the material dispensed will not cause damage to persons or property on the surface. The engine and propeller noise emitted as the pilot executes a pullup and turnaround over these areas may result in damage to some enterprises. The adjacent area should also be investigated for fish ponds, lakes, and streams because certain economic poisons may have a lethal effect upon fish and wildlife.

2) The pilot should make a determination if the area to be treated could be considered to be a congested area. He or she should be familiar with the provisions of part 137, § 137.51 for operating over a congested area.

I. Aircraft Operating Limitations. The pilot must have adequate knowledge of operating limitations for the aircraft to be used in accordance with the applicable requirements contained in part 91, § 91.9. Special emphasis should be placed on weight and balance information. If the applicant conducts operations using helicopters, the applicant should understand that the Height/Velocity diagrams do not provide information for weights above the maximum certificated gross weight. The applicant must also be familiar with aircraft performance capability, provided performance data have been established for the aircraft to be used. Knowledge about performance shall include such items as:

- Stall speeds at maximum certificated gross weight, straight ahead, power off, flaps up (V_{S1});
- Best rate (V_Y) and best angle (V_X) of climb speed;
- Maneuvering speeds;
- Density altitude and its effect on performance; and
- Takeoff distance required to clear a 50-foot obstacle, maximum certificated gross weight, with zero wind.

J. Safe Application Procedures. The applicant should be knowledgeable about safe flight and safe application procedures during agricultural operations.

1) The pilot should be familiar with the hazards associated with dispensing materials that may be flammable.

2) When conducting operations over sloping terrain, caution should be exercised relative to the direction of swath runs. Flying up the slope may result in stalling the aircraft before reaching the end of the swath run, or contribute to an inadvertent stall during the pullup or turnaround.

3) Pullups and turnarounds are normally made on the downwind side of the centerline of the swath run. However, unfavorable terrain, wires, guy wires, poles, trees, or other obstructions may require pullups and turnarounds to be made on the upwind side. If a no-wind condition exists, it is usually the best procedure to make the turn into an open area (if available) in the event of power loss or engine failure.

4) The aerial applicator pilot should avoid diversion of attention during a swath run. Not doing so may result in allowing the aircraft to fly into the ground or other obstruction.

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5) The aerial applicator pilot may have a tendency to apply forward pressure on the elevator control or cyclic control (on a helicopter) when flying under wires. Such a tendency should be avoided because once any part of the structure of the aircraft (wheels, skids) becomes entangled in crop foliage, it may be difficult, if not impossible, to prevent the aircraft from being pulled to the ground. The vertical fin may also contact the wires as the aircraft passes underneath them. Pilots of airplanes and especially helicopter pilots may choose not to fly under wires and dress-up the field parallel to the wires.

6) When two or more aircraft are used in applying chemicals to a field, the pilots conducting the operations should be encouraged to make arrangements between themselves concerning who performs the cleanup swaths or trim passes, when applicable. Mid-air collisions have occurred between aircraft conducting team operations when such coordination has not been accomplished.

7) When using Global Positioning System (GPS) swath marking equipment, extreme caution should be used to prevent diverting attention away from the task of flying the airplane safely. The pilot should make it a practice not to make adjustments to the computer while in the swath run. The pilot should plan the turn using only reference to the light bar instead of fixating on it.

K. Night Operations. If the operator conducts night operations, the pilot should have knowledge of night operations. See Volume 6, Chapter 6, Section 1, Conduct a Part 137 Base Inspection, for test areas.

5-1736 SKILL TEST. The skill test shall be accomplished using the content guidance shown in subparagraph 5-1739H.

5-1737 PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. This task requires knowledge of the regulatory requirements of part 137 and FAA policies and qualification as an aviation safety inspector (ASI) (Operations).

B. Coordination. This task may require coordination with the Airworthiness unit. This task may be performed by the operator's chief supervisor.

5-1738 REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions):

- 14 CFR parts 1, 61, 91, and 137, and
- Advisory Circular (AC) 137-1, Certification Process for Agricultural Aircraft Operations.

B. Forms:

- FAA Form 1360-33, Record of Visit, Conference, or Telephone Call;
- FAA Form 8000-36, Program Tracking and Reporting Subsystem Data Sheet; and
- FAA Form 8710-l, Application for Airman Certificate or Rating.

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C. Job Aids. Sample letters and figures.

5-1739 PROCEDURES.

A. Need for Knowledge and Skill Test. Determine if the pilot needs the knowledge and skill test or has been previously qualified under part 137. The knowledge and skills test must be reaccomplished by the pilot when changing operators.

NOTE: Testing is not required for a pilot or chief supervisor when he or she has an FAA inspector logbook endorsement or letter of competency.

1) If the test is not required or can be conducted by the operator's chief supervisor, record the outcome on FAA Form 1360-33. Place this in the district office file for the operator. Do not open a PTRS file for this task.

2) If a test is required, provide applicant with a copy of FAA Form 8710-1 and schedule a date and time for the test.

B. PTRS File. Open PTRS file for this task.

C. Review Application. After arriving for the test, examine FAA Form 8710-1 for completeness and accuracy.

1) Ensure that the applicant has checked "other" under Section I, Application Information, and entered "Agricultural Aircraft Pilot Test" in the blank provided.

2) Ensure that the applicant has filled out Section I, A through U. If "U" has been checked yes, "V" must also be filled out.

3) Ensure that the applicant has filled out Section IIA, l, 2a, and 2b.

4) The applicant does not need to fill out Section III, Record of Pilot Time.

5) Ensure that the applicant has checked either "yes" or "no" in Section IV.

6) Ensure that the applicant has signed and dated the application in Section V.

7) No instructor's recommendation is required on the reverse side of FAA Form 8710-1.

D. Pilot Certificates. Inspect pilot certificates and insure the pilot has:

- An appropriate and current medical certificate, and
- An appropriate pilot certificate with category and class ratings as required (§ 137.19).

E. Knowledge Test. Conduct oral and/or written examination on the subject matter specified in § 137.19(e)(1).

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1) If the oral or written test portion is failed, notify the pilot and operator. Confirm in writing (Figure 5-197, Letter Confirming Failure of Knowledge and Skill Test) and reschedule the knowledge portion of the test. On the reverse side of FAA Form 8710-l, check "disapproved" under the Inspector's Report section. Place FAA Form 8710-1 in the district office file on the operator. Do not forward it to Oklahoma City. If the knowledge portion of the test is unsatisfactory, the skill test portion is not to take place.

2) If the oral or written test portion is satisfactory, proceed with the skill portion of the test. Discuss the sequence of events and the safety considerations for the skill portion of the test.

F. Aircraft Documents. Inspect the aircraft's documents. Ensure that the registration and airworthiness certificates are current and appropriate.

1) N-number matches that on the registration certificate;

2) Data plate information, serial number, airworthiness certificate, and registration certificate match each other and aircraft registry records; and

3) Agricultural operator certificate facsimile on board, if knowledge and skill test is not conducted as part of initial operator certification.

G. Aircraft Conformity. Inspect aircraft for compliance with part 137, §§ 137.19(d), 137.31(b), and 137.33(a) and (b) (Airworthiness).

1) Aircraft maintenance documents reflect that all required inspections have been accomplished, and

2) Airworthiness Directives (AD) are complied with.

H. Skill Test. Conduct the skill portion of the test (§ 137.19(e)(2)). The applicant is to be briefed and evaluated on piloting skill and operational judgment in the following:

1) Ground crew coordination and loading procedures;

2) Engine start, warm-up, and taxi procedures;

3) Short field and soft field takeoffs (airplanes and gyroplanes only), directional control, lift-off, and climb;

- One soft field takeoff and climb, and
- One short field takeoff and maximum performance climb.

4) Approaches to the working area;

- Satisfactory aerial survey of area for obstructions, and
- Proper method of beginning operations—normally, starting operation crosswind on downwind side of field.

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5) Flareout;

- Should not touch ground or crop during flareout, and
- Should be consistently at same height and proper position over field on several flare-outs.

6) Swath runs;

- Consistent altitude (plus or minus 5 feet),
- Four or more passes demonstrated,
- Looking behind the aircraft at the spray pattern during swath run is disqualifying,
- Flight should be executed so as not to fly through the spray droplets or the dust of previous swath. Successive swath runs spaced so as to place the wing tip into or overlapping the vortices of the previous swath is not disqualifying, and
- Start and stop the spray application within the target area and prevent drift onto adjacent fields.

7) Pull-ups and turnarounds;

- Consistent height in turnarounds, obstructions permitting,
- Smooth and coordinated,
- Turn in proper direction relative to wind, obstructions, and field layout,
- Obstruction clearance before starting turn, and
- Proper throttle and hopper or tank control.

8) Clean-up swath or trim passes;

- Recognizes the need for clean-up swath, and
- Adequately covers area to be treated.

9) Jettisoning of remainder of load after swath runs in the event of in-flight emergency;

NOTE: Prior to evaluating this maneuver, caution the pilot that this demonstration could be extremely hazardous if conducted with a full hopper load. You must ensure that the pilot has received proper training on the flight control forces that may be experienced during a jettison and the proper procedures for maintaining aircraft control.

10) Rapid deceleration or quick stops (helicopter only);

11) Approach, touchdown, and directional control on landing; and

- One landing, and
- Adequate precautions used around turning propellers or rotor blades.

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12) Taxi, engine shutdown, and securing of aircraft.

I. Skill Test Unsatisfactory. If the applicant fails the skill portion of the test, notify the pilot and the operator. Confirm in writing (Figure 5-197) and schedule a date and time for re-examination. On the reverse side of FAA Form 8710-1, check disapproved under the Inspector's Report section. Place FAA Form 8710-1 in the district office files on the operator. Do not forward it to Oklahoma City.

J. Skill Test Satisfactory. When the applicant satisfactorily accomplishes the skill portion of the test, issue a letter of competency (Figure 5-198, Statement of Competency Letter) or make a logbook entry (Figure 5-199, Sample Logbook Endorsement). If a logbook entry is used, write a memorandum indicating satisfactory completion of the test for the office file. On the reverse side of FAA Form 8710-l, Airman Certificate and/or Rating Application, check the approved box under the Inspector's Report section. Place FAA Form 8710-1 in the district office files on the operator. Do not forward it to Oklahoma City.

K. PTRS. Close PTRS work entry for this task.

L. District Office File. Place results of test in the district office file for that operator.

5-1740 TASK OUTCOMES. Completion of this task results in either:

- A logbook entry or letter of competency, or
- A letter to the operator and/or pilot indicating failure of the knowledge, skills, or both portions of the test.

5-1741 FUTURE ACTIVITIES. Any future monitoring of a pilot after successful completion of a knowledge and skill test would be as part of a scheduled surveillance of the part 137 operator or as a result of a complaint, violation investigation, accident investigation, or in cooperation with other government agencies.

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Figure 5-197, Letter Confirming Failure of Knowledge and Skill Test

[FAA Letterhead]

[Date]

[Applicant's address]

Dear [applicant's name]:

This is to inform you that on [date], you failed to satisfactorily demonstrate the required [skill] [knowledge] required by Title 14 of the Code of Federal Regulations (14 CFR) part 137 to act as a pilot in aerial agricultural operations.

The areas of deficiency were:

[Cite the areas.]

Additional instruction or study in these areas is recommended.

Should you have any questions concerning this test, please contact this office.

Sincerely,

[Signature of inspector conducting the test]

[Send copy to supervisor of agricultural operations, if applicable.]

Figure 5-198, Statement of Competency Letter

[FAA Letterhead]

[Date]

[Operator's name and address]

Dear [operator's name]

This is to certify that [pilot's name] holder of [grade of certificate] pilot certificate [certificate number] has on this date satisfactorily completed the knowledge and skill test for an agricultural aircraft pilot as specified under Title 14 of the Code of Federal Regulations (14 CFR) part 137, § 137.19(e) and is qualified to serve as pilot in command in agricultural aircraft operations.

[He or she] is [is not] authorized to dispense economic poisons.

Sincerely,

[signature and title of FAA inspector or supervisor of agricultural operations, if applicable]

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Figure 5-199, Sample Logbook Endorsement

This is to certify that [pilot's name] holder of [grade of certificate] pilot certificate [certificate number] has on this date satisfactorily completed the knowledge and skill test for an agricultural aircraft pilot as specified under Title 14 of the Code of Federal Regulations (14 CFR) part 137, § 137.19(e) and is qualified to serve as pilot in command in agricultural aircraft operations. [He or she] is [is not] authorized to dispense economic poisons. [date] [signature and title of FAA inspector or supervisor of agricultural operations]

RESERVED. Paragraphs 5-1742 through 5-1760.

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VOLUME 6 SURVEILLANCE

CHAPTER 2 PART 121, 135, AND 91 SUBPART K INSPECTIONS

Section 21 Training Program Inspections for Parts 121 and 135 (PTRS Code 1626)

6-624 GENERAL. This section contains direction and guidance to be used by operations inspectors for conducting training program inspections. The inspector's objective is to ensure that the operator's objective is to ensure that the operator's training program complies with regulatory requirements and that instructional methods are effective. Principal operations inspectors (POI) and geographic program managers (GPM) are required to schedule annual training program surveillance as part of a work program, in response to National Program Guidelines (NPG), or when an operator's inspection reports, incidents, or accidents indicate deficiencies in crewmember or dispatcher skill or knowledge.

NOTE: As part of the approval process, inspectors must conduct training program inspections in phase four of the initial approval process of a training program (see Volume 3, Chapter 19, Section 2, paragraph 3-1108, for more information).

A. Training Program Inspection Areas. Training program inspections involve much more than simply observing training in progress. The Flight Standards Service (AFS) has identified five primary inspection areas to be observed during training program inspections:

- Training curriculums,
- Courseware,
- Instructional delivery methods,
- Testing and checking methods, and
- Specific topics (identified from Program Tracking and Reporting Subsystem (PTRS) data or other sources).

B. Annual Inspection Plan. POIs and aircrew program managers (APM) in Aircrew Designated Examiner (ADE) programs must develop annual inspection programs that are adapted to specific operators. Training programs vary in their complexity depending on the operator's size, aircraft fleet diversification, number of crewmembers and dispatchers, training locations, and scope of operation. POIs may find that a single annual inspection is sufficient to verify the effectiveness of a simple operator's program. Inspection of a complex operator, however, requires a modular approach in which specific program components or locations are identified and inspected in progressive increments. The POI of a complex operator is responsible for coordinating the inspection process with appropriate GPMs who, in turn, supervise those inspections conducted in their areas of responsibility.

C. Special Inspections. A POI may determine that there is a need to initiate a special emphasis training program inspection. This type of inspection may be initiated for such reasons as incidents, accidents, or a series of deficiencies discovered through trend analysis of inspection data. Special emphasis training program inspections are relatively short in duration and usually focus on a limited area, such as training on the use of checklists or on wind shear.

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6-625 TRAINING PROGRAM INSPECTION PRACTICES AND PROCEDURES. Before beginning a training program inspection, inspectors must become thoroughly familiar with contents of Volume 3, Chapter 19. There are many methods of curriculum development and training methods that an operator may use. To obtain approval of a program, the operator must demonstrate that the program or program segment is in compliance with regulatory requirements and that it effectively prepares crewmembers and dispatchers to perform duties in revenue service. The guidance contained in Volume 3, Chapter 19, has been developed for this purpose. Inspectors should be aware of the competitive economic incentives operators have to improve the quality of, and to reduce the cost of, their training. Operators have great latitude in developing training programs tailored to their needs; and POIs have great latitude in approving individualized programs.

A. Preparation. Before conducting an inspection of a particular training program area, the inspector should first obtain a copy of the operator's approved training program outline from the POI and become familiar with it. The inspector should review the outline for regulatory compliance and for adequate subject coverage. Should the inspector discover a discrepancy that requires a modification of the outline, a report must be made to the POI by means of the PTRS. Should the inspector discover a serious discrepancy, the inspector shall notify the POI by telephone.

B. Onsite Activity.

1) On arriving at the training site, inspectors should introduce themselves to the person conducting the training, present their Federal Aviation Administration (FAA) credentials, and state the purpose of the inspection.

2) Inspectors shall refrain from active participation in the training being conducted and shall make every effort not to influence the training environment or the instruction in the subject matter.

3) Should an inspector have comments on any of the areas of training, the inspector may communicate this information to the appropriate individual(s) in private. The inspector will reserve comments for debriefing of the instructor until after the training session or during an appropriate break in training.

NOTE: This does not alleviate the need to include the comments in the PTRS.

4) Inspectors should be aware that approved training hours are measured by curriculum segments and that each hour of training normally contains a reasonable break time of 10 minutes.

C. Courseware Inspection. While observing the training, inspectors should evaluate the courseware. Inspectors should also evaluate whether or not the courseware and the instructor are effective in communicating the essential points of the lesson.

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1) Instructor Courseware. The inspector must observe whether or not the operator's instructor guides and lesson plans follow the approved outline. During observation, inspectors must also ensure that instructor guides and lesson plans adhere to the following criteria:

a) Instructor courseware should be clearly titled for the appropriate curriculum segment.

b) The instructor must be able to conduct detailed instruction for each subject area.

c) Instructional material should be presented in a logical manner and in a sequence that is easy to use and comprehend.

d) Courseware should provide references to applicable manuals of the operator.

e) The instructor should use some means of determining that the students are properly assimilating the material (such as responder panels, multiple choice questions, or in class exercises).

2) Student Courseware. The inspector must evaluate various self-teaching training mediums, such as video tapes, audiovisual (carousel-type) slide presentations, computer-based training (CBT) presentations, programmed learning publications, and home-study materials, to ensure that they satisfy the requirements of the approved outline. Training mediums must adhere to the following standards:

a) The information must agree with the operator's manual and other publications.

b) The material must have sufficient detail to ensure that students comprehend the applicable subject area.

c) The courseware should include some means of testing student assimilation of information presented.

D. Instructional Delivery Methods. This inspection area consists of the following inspection modules:

1) Training Facilities/Environment Inspection. The inspector must ensure that the operator's training facilities and the instructional environment are conducive to learning. An inspector must ensure that the facilities meet the following standards:

a) Provide adequate seating space for students.

b) Provide storage areas for training materials.

c) Provide area for instructors to prepare their lessons.

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d) Are free of distractions, which adversely affect instructional delivery (such as excessive temperatures, extraneous noise, poor lighting, and cramped classrooms and/or work spaces).

2) Criteria for Instructors. The inspector must ensure that the quality of instruction provided by instructors in both ground and flight training segments is effective. Instructors must create an effective environment for training. The instructor must be flexible and alert to the individual needs of the students. The following guidelines apply to instructors and/or flight instructors. Instructors must follow these criteria where applicable.

a) Instructors:

1. Must know the operator's training policies and procedures, know how to complete required training forms, and must exhibit satisfactory instructional methods and techniques.

2. Must be knowledgeable in the specific area of instruction and must be able to present the material in a logical, clear, and organized manner.

3. Must be aware of the minimum equipment required for each element of training and must conform to the limitations imposed on the training element(s) by inoperative component(s).

4. Should follow the applicable lesson plans, guides or other training aids to ensure that the material is properly presented as designed.

b) Flight Instructors:

1. Must be competent in the operation of flight training devices (FTD) or flight simulators and must be knowledgeable of the training elements that may be accomplished in that level of simulator or training device.

2. Should provide a thorough preflight briefing on all maneuvers and procedures that will be accomplished.

3. Should provide a thorough postflight debriefing to review each student's performance during a training session.

E. Training Aids and Equipment. Inspectors must ensure that the operator's training aids and equipment are appropriate to the subject matter and that they operate properly. This includes audiovisual equipment, systems back mockup boards, panel layouts, ground training devices, instructor station equipment, student responders (if applicable), and other related items.

1) All equipment used in the training program must operate and function in good working order. Replacement parts or components (such as slide projector lamps) should be readily available.

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2) Any equipment designated to be used for self teaching purposes, such as CBT platforms, must have clear operating instructions readily available for student use.

3) Systems panels, layouts, boards, or mockups (such as aircraft exit mockups) should accurately represent the designated aircraft.

F. Flight Simulator or Training Device Inspection Module. The inspector should ensure that the operator's flight simulators and FTDs are being adequately maintained and that they effectively replicate the associated aircraft.

NOTE: The National Simulator Team (NST) is responsible for conducting a flight evaluation of the training device or simulator. The inspector is responsible, however, for determining the general condition of the equipment and the operator's general ability to maintain the equipment to those same standards while training is in progress.

G. Testing and Checking. In the inspection of an operator's training program, the inspector must conduct observations of the elements that involve evaluation and qualification. These elements include, but are not limited to, check airman programs and activities, training records, failure rates, and testing and checking standards. The inspector must evaluate the following modules:

NOTE: Check airman observations (PTRS activity codes 1641, 1642, 1643, 1644, and 1645) and crew/dispatcher records inspection activities (PTRS activity code 1627). When these activities are accomplished as a part of a training program inspection, they will be recorded by using PTRS activity code 1626.

1) Check Airman Programs and Activities. The inspector should evaluate all elements that relate to check airman training and qualification, check airman records, and standardization programs (see Volume 3, Chapter 20, for specifics on check airman inspection programs).

2) Training Records. The inspector should evaluate the operator's training records for information regarding the overall effectiveness of an operator's training program. The testing and checking results available from the training records are an excellent source of information for POIs to establish positive or negative trends in the operator's training program.

3) Oral and PRACTICAL TESTS. **INSPECTORS SHOULD OBSERVE OR CONDUCT A NUMBER OF AIRMAN CERTIFICATION EV**aluations as well as proficiency, competency, or line checks (as applicable) to determine the overall effectiveness of the operator's training program, check airman programs, and testing and/or checking standards. Inspectors should place specific emphasis on flight events which require repetition or excessive instruction and should evaluate them according to the following criteria:

a) Testing and checking standards must comply with the regulations, the safe operating practices, and the guidance contained in this order.

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b) Testing and checking standards must be consistently applied throughout the operator's training organization by its check airman and instructor personnel.

NOTE: Testing and checking observations provide a direct measure of the effectiveness of courseware and instructional delivery methods. Inspectors should use the applicable job aids contained in this volume when observing and evaluating testing or checking in progress.

4) Quality Control. The inspector shall observe the operator's quality control program to ensure that training effectiveness is continually monitored and that specific areas or items are corrected when necessary. The operator's quality control system must ensure that students do not proceed to the next module or training segment until satisfactory proficiency has been achieved. Additionally, training folders must be maintained by the operator while students are in a specific curriculum. Inspectors should review the information contained in these folders to identify any deficient trends. This information, coupled with the results of testing and checking, provides a quantifiable method for measuring training effectiveness.

H. Inspection Results. As a source of information about an operator's overall performance, inspectors can use the PTRS to evaluate inspections and investigations previously done on the operator. A high rate of satisfactory performance usually indicates a strong, effective training program. Repeated cases of unsatisfactory performance, however, often indicate deficiencies in an operator's training program.

1) Use of the PTRS. The PTRS is an effective tool for inspectors to use during the examination and analysis of information obtained from investigative and inspection reports. Standard and ad hoc reports can be generated by the system to search for inspector comment codes which specifically relate to or, through analysis, could lead to deficient areas in an operator's training program. Both standard and ad hoc reports should be generated through PTRS by using PTRS activity codes which relate to training program activities, including check airman inspections and the results of airman certification activities. For example, the inspector could pull up a standard report (referred to as a comment code summary report), to obtain all the "U" and "P" comments submitted by inspectors during training program evaluations (PTRS activity code 1306). Inspectors should refer to the applicable PTRS user manual for both a detailed explanation of what types of reports are available and the procedure for using the system.

2) POI Review. The POI shall review results of inspection reports, incident and accident reports, enforcement actions, and other relevant information about the operator's performance for indications of training effectiveness. For example, repeated reports of deficiencies, such as configuring too late, incomplete briefings, or incorrect use of the checklists may be traceable to a lack of specific training or ineffective training in a particular area.

RESERVED. Paragraphs 6-626 through 6-640.

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VOLUME 6 SURVEILLANCE

CHAPTER 2 PART 121, 135, AND 91 SUBPART K INSPECTIONS

Section 36 Inspect Parts 91 Subpart K and 121/135 (10 or More) Operator's Maintenance Records

6-986 PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) ACTIVITY CODES.

A. Maintenance: 3634, 3649.

B. Avionics: 5634, 5649.

6-987 OBJECTIVE. This section provides guidance for inspecting a program manager/operator's aircraft maintenance records under Title 14 of the Code of Federal Regulations (14 CFR) parts 91 subpart K (part 91K) and 121/135 (10 or more) aircraft.

6-988 GENERAL. The Inspecting Operator Maintenance Records Tutorial can be found at http://www.humtech.com/FAA/AFS/IOMR/menu/index.htm.

A. Records. Aircraft maintenance records include any records that document the work performed on an aircraft. A program manager/operator's aircraft maintenance records must be inspected periodically to ensure that they meet the requirements of the operator's recordkeeping system.

B. Surveillance Criteria. While inspecting a program manager/operator's aircraft maintenance records, principal inspectors (PI) must determine if all the work is based on instructions, procedures, or information that was approved previously or accepted by the Federal Aviation Administration (FAA). Such data can be in the form of:

- Manufacturer's manuals;
- Service Bulletins (SB);
- Service Letters (SL);
- Data included in the operator's approved inspection and/or maintenance programs;
- Manufacturer/operator's approved Engineering Orders (EO) or authorizations;
- Airworthiness Directives (AD), including Sensitive Security Information (SSI) ADs (generally applicable to part 121 air carriers); and
- Other accepted documents.

C. Personnel Identification Recording Requirements. The program manager/operator's manual must provide for a positive means of identification, such as an employee identification number, for any person performing or approving work.

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6-989 RECORD REQUIREMENTS.

A. Retaining Airworthiness Releases. (Applicable to part 91K operators who maintain program aircraft under a Continuous Airworthiness Maintenance Program (CAMP)).

1) Part 121 operators must retain the Airworthiness Releases for 2 months.

2) All of the records necessary to show that the requirements for the issuance of an Airworthiness Release are met must be retained until the work is repeated or superseded, or for 1 year.

B. Total Time in Service Records.

NOTE: For the purpose of this paragraph, "time in service" with respect to maintenance time records means from the moment an aircraft leaves the surface of the earth until it touches down at the next point of landing.

1) Total time in service is the accumulation of "time in service" starting from the date of manufacture and continuing for the life of the aircraft. You must not confuse engine rebuilding and certifying to zero time in service with a zero time since last overhaul (TSLO) certification.

2) Zero TSLO certification does not affect the calculation of total time in service. When an engine is rebuilt and certified to zero time, the total time in service is zero (part 91, § 91.421).

NOTE: Only the manufacturer or the manufacturer's representative can zero time an engine.

C. Life-Limited Parts. Program manager/operators must have a current record of the status of life-limited items. This record indicates the present accumulated time in service of each life-limited item.

NOTE: Life-limited parts may not be rebuilt and certified to zero time.

D. Records of Overhaul. A program manager/operator must maintain overhaul records of any item required to be overhauled. These records must be maintained until the work is superseded by work of equivalent scope and detail.

E. Inspection Status. Inspection status defines the work that has been and is scheduled to be performed for the inspection or maintenance program. The inspection status records must show the following:

- Type of most recent inspection;
- The time at which that inspection was performed, expressed in terms of hours; cycles, or calendar time; and
- The scheduled time and type of the next inspection.

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F. Status of ADs. The program manager/operator must maintain a current status of applicable ADs, including the date and methods of compliance, and if the AD involves recurring action, the time and date when the next action is required.

NOTE: Only data specifically approved for AD accomplishment by the appropriate Aircraft Certification Office (ACO) is authorized.

1) All work programs should include the surveillance of ADs. You can use the following methods to accomplish AD verification:

a) Actual surveillance of the AD being accomplished. This would also include a review of all paperwork, such as Engineering Authorizations, EOs, workcards, maintenance manual references, and SBs, to ensure that the AD is properly complied with.

b) Physical verification of previous AD accomplishment. This should include verification, by record review, that the method of compliance is clearly recorded (e.g., paragraph, section, etc.), and if the AD requires recurring action, the time and date when the next action is due.

NOTE: Department of Transportation (DOT) Order 1600.75, Protecting Sensitive Unclassified Information (SUI), provides policy and guidance for protecting sensitive, unclassified information we create or control. AD actions that relate to national transportation safety or security issues fall within the scope of DOT Order 1600.75 and are defined as SSI.

2) SSI is a designation unique to the DOT's operating administrations and to the Department of Homeland Security (DHS). It applies to information we obtain or develop while conducting security activities, including research and development activities. Unauthorized disclosure of SSI would:

a) Constitute an unwarranted invasion of privacy,

b) Reveal trade secrets or privileged or confidential information obtained from any person, or

c) Be detrimental to transportation safety or security.

3) In general, persons have a duty to protect the information and then a need to know it before given access to SSI ADs. Use protective measures to safeguard SSI ADs from uncontrolled release outside the FAA and indiscriminate dissemination within the FAA.

4) The "Final rule; request for comments" will only be issued after the compliance time specified in the "Sensitive Security Airworthiness Directive" has passed. If there are no aircraft on the U.S. Registry, only the "Final rule; request for comments" AD will be issued.

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5) An AD resulting from SSI must be distributed only to need-to-know persons. Each Directorate must coordinate early with the Delegation and Airworthiness Programs Branch (AIR-140) and provide a list of affected operators for specific distribution.

6) An SSI AD is not posted to Regulatory and Guidance Library (RGL). A followup version of the AD is published in the Federal Register (FR) and RGL in the form of a "Final rule; request for comments" only after the compliance time specified in the "Sensitive Security Airworthiness Directive" has passed.

7) The PTRS comment code should relate to the Airlines for America's (A4A) aircraft codes (ATA Spec 100 codes) of ADs being inspected. Comments should contain the numbers of each AD verified, the type of AD verified, and the complete inspection results.

G. Major Repair and Major Alteration Record.

1) An operator must prepare a report of each major repair and major alteration (not applicable to part 91K or part 135 operators).

a) A copy of the major alteration report must be sent to the certificate-holding district office (CHDO) for review (not applicable to part 91K or part 135 operators).

b) A copy of the major repair report must be available for inspection by the Administrator (not applicable to part 91K or part 135 operators).

2) Additionally, the program manager/operator must keep a list of all current major alterations (in addition to a current list of all major alterations, part 91K operators who maintain program aircraft under a CAMP and part 135 operators must also keep a current list of all major repairs).

6-990 REPAIR STATION RECORDS OF WORK PERFORMED ON A PROGRAM MANAGER/OPERATOR'S AIRCRAFT. Since repair stations only have to retain records of work performed for 2 years, some operators have reported that maintenance records are not always available from repair stations beyond the 2-year retention period. Since the program manager/operator is always responsible for obtaining and retaining the records required by the Administrator, advise operators to require a copy of the work documentation from the repair station at the time that the work is performed.

6-991 COORDINATION REQUIREMENTS. This task requires coordination between the PIs, the operator, and with the Regulatory Support Division, Aviation Data Systems Branch (AFS-620), as applicable. If the task is performed by the office with geographic responsibility, coordinate with the CHDO PIs.

6-992 REFERENCES, FORMS, AND JOB AIDS.

A. References. Title 14 CFR parts 39, 43, 65, 91, 135, and 145, as well as part 129, § 129.14.

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B. Forms. None.

C. Job Aids. Job Task Analysis (JTA): 2.3.99.

6-993 PROCEDURES.

A. Review the Office File.

B. Inspect the Maintenance Records. Ensure that the program manager/operator has retained the required maintenance/alteration/inspection records for each aircraft, including airframe, engine, propeller, and appliances. These records must include the following information:

1) A description of the work performed (data acceptable to the Administrator) including the date of completion.

2) The name of the person performing the work, if the work is performed by a person outside the organization of the certificate holder.

3) The name or other positive identification of the person approving the work.

C. Inspect the Program Manager's/Operator's Record System. Inspect records to ensure that manual procedures are being followed. During inspection, document and photocopy any confusing areas, obvious omissions, or apparent discrepancies. Records checked should include the following:

1) Airworthiness Releases. (Applicable to part 91K operators who maintain program aircraft under a CAMP.)

a) Ensure that part 121 operators retain Airworthiness Releases for at least 2 months.

b) Ensure that the Airworthiness Release signature is authorized by the operator.

c) Review the signer's training record to ensure that the person is trained, qualified, and authorized to the level identified in the program manager/operator's manual.

2) Flight/Maintenance Logs. Obtain and review the flight/maintenance logs to determine the effectiveness of the Airworthiness Release procedures following scheduled inspections and nonroutine maintenance. Review the records to ensure the following:

a) Flight discrepancies are entered after each flight.

b) Corrective actions are related to the discrepancy.

c) Corrective actions and sign offs are entered in the maintenance record in accordance with manual procedures.

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d) Repetitive discrepancies are handled according to the manual.

e) Deferred maintenance, as authorized by the minimum equipment list (MEL), is deferred in accordance with the operator's MEL and manual instructions.

f) Required Inspection Items (RII) are signed off in accordance with the manual instructions.

g) The inspector was authorized by the operator to perform the inspection.

3) Scheduled Inspections. Select or obtain work packages for scheduled inspections and ensure the following:

a) Scheduled inspections are properly signed off.

b) Generated nonroutine items are properly signed off.

c) RIIs are properly identified and signed off by properly authorized, qualified, certificated, and trained personnel.

d) Repairs are categorized correctly (major or minor) and approved data is being used, as required.

4) Total Time/Cycle-in-Service Records. Compare the manual procedures with the actual accomplishment of the total time/cycle-in-service records for the airframe, engine, propeller, and rotor.

NOTE: Although part 121 does not specifically call for time/cycle-in-service records of engines, propellers, and rotors, it is difficult for an operator to control the maintenance program without those records.

a) Select and obtain a total time/cycle-in-service record for a sample number of aircraft to ensure that cumulative flight times/cycles are added to the record.

b) Make a spot check of the cumulative total time/cycle in service against the flight logs to ensure that daily entries correspond to the flight log.

c) If the program manager/operator maintains a handwritten maintenance record for engines, compare the record entries to the aircraft flight log entries to determine the following:

- Overall accuracy, and
- The possible transposition of flight time/cycle in service, numbers, etc.

5) Life-Limited Parts Records. Compare the manual procedures for life-limited parts with the actual recording of the current status of life-limited parts. Select a random sample of records and ensure the following:

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a) All life limited parts described on Type Certificate Data Sheets (TCDS) or in a manual referenced on the TCDS are noted.

b) The current status of each part is provided to include:

- Total operating hours/cycles accumulated,
- Life limit (total service life),
- Remaining time/cycles, and
- Modifications.

c) The time/cycle limits on the operator's list are the same as those listed by the manufacturer.

d) Life limits have not been exceeded. Select a sample of life limited items that have been installed within the last 12 months and review records to ensure that life limited time was carried forward from the previous service record.

e) If overhauled, the overhaul record is available.

f) The life limit of an item has not been changed as a result of the overhaul.

6) Overhaul Records. Compare the manual procedures for maintaining the overhaul record with the actual overhaul record content.

a) Select a random sample of overhauled items to ensure the following:

- Overhaul records are available for items selected,
- The records contain a description of the overhaul,
- The records show the time since the last overhaul,
- The item was overhauled in accordance with the overhaul specifications by a qualified and authorized person, and
- The component was approved for return to service by an authorized person.

b) Review removal/installation records of overhauled components to determine if the overhaul was done within the authorized time limits. Current regulations require these records to be maintained until the work is superseded by work of equivalent scope and detail.

7) Inspection Status Records.

a) Compare the manual procedures for maintaining the current aircraft inspection status with available records. Ensure that the recorded daily flight hours/cycles are used to obtain the current inspection status.

b) Take a random sample of aircraft inspection records to ensure that scheduled inspection times/cycles were not exceeded (overflown).

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8) One-Time/Recurring ADs. Request a random sample of aircraft AD compliance records to ensure the following:

a) The records contain all applicable ADs for the sampled aircraft.

b) AD requirements were accomplished within the effective times of the AD.

NOTE: Put a special emphasis on checking recurring ADs.

c) The AD record contains the current status and method of compliance. The current status must include the following:

- A list of all ADs applicable to the aircraft,
- Date and time of compliance, and
- Time and/or date of next required action (if recurring AD).

d) The record is being retained indefinitely.

NOTE: If any ADs have an alternative method of compliance (AMOC), ensure that the operator has obtained prior approval for that alternative method.

e) The method of compliance is the same as specified in the AD or AMOC.

f) The date of compliance is identical with the date on the current status list.

g) The mechanic/inspector was properly trained and authorized to accomplish the work.

h) The accomplishment was properly signed off.

9) Major Alteration and Major Repair Records. (This is also applicable to part 91K operators who maintain program aircraft under a CAMP.)

a) Compare the manual procedures for maintaining a list of major alterations and the reports for major repairs with the actual work records.

b) Compare a random sample of major repair and alteration records to the alteration and repair list and/or reports to ensure the following:

- Lists and/or reports contain the date of accomplishment and a brief description of the work, and
- The respective maintenance records show that the work was accomplished in accordance with approved data.

NOTE: When major alterations or major repairs are identified but not recorded on the above-mentioned list or report, request the actual maintenance accomplishment record and the FAA-approved data from the operator.

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D. Check the Program Manager/Operator's Procedures. Ensure the operator has procedures that detail how all maintenance records generated at line maintenance facilities or other off site stations will be transferred to the facility where records are normally held.

E. Analyze the Findings. Evaluate all deficiencies to determine if corrective actions will be required.

6-994 TASK OUTCOMES.

A. Complete the PTRS Record. PTRS comments should include the numbers of each AD verified, the type of AD verified, and the complete inspection results.

B. Complete the Task. Completion of this task may result in the following:

- A report of any deficiencies submitted to the CHDO if the inspection was performed by the office having geographic responsibility,
- A letter from the CHDO informing the operator of the results of the inspection, and
- An Enforcement Investigation Report (EIR), as applicable.

C. Document the Task. File all supporting paperwork in the operator's office file.

6-995 FUTURE ACTIVITIES. Normal surveillance.

RESERVED. Paragraphs 6-996 through 6-1010.

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VOLUME 6 SURVEILLANCE

CHAPTER 6 PART 137 INSPECTIONS

Section 1 Conduct a Part 137 Base Inspection

6-1446 PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) ACTIVITY CODE. 1616.

6-1447 OBJECTIVE. The objective of this task is to determine that the principal base of operations for an applicant for a Title 14 of the Code of Federal Regulations (14 CFR) part 137 operating certificate, or for an existing operator, meets the regulatory requirements of the certificate. Successful completion of this task results in an indication of satisfactory or unsatisfactory in the operator's district office file.

6-1448 GENERAL.

A. Title 14 CFR Requirements. Title 14 CFR does not specify what type of physical facilities an agricultural operator must have. This is usually governed by state and local regulations and to some extent by regulations of the Environmental Protection Agency (EPA).

B. Inspection Coverage. Federal Aviation Administration (FAA) inspectors have no enforcement authority for state, local, United States Department of Agriculture (USDA), or EPA areas. If the inspector suspects there might be a violation of a non-aviation regulation, they should inform the operator. Aviation safety inspectors (ASI) should coordinate with the local EPA, USDA, or state office having jurisdiction over the operation and request assistance.

C. Aviation Safety. The inspector's duty is to determine that the operator's practices and procedures at the base of operations conform to 14 CFR insofar as it applies.

6-1449 SPECIFIC AREAS OF CONCERN.

A. Preparation. Before going to an agricultural operator to conduct surveillance, it is important that the inspector review the district office file on the operator. This will give the inspector insight into the type of operation being conducted (i.e., private, commercial, or congested area operation). In the case of a newly certificated operator, weak areas noted in the certification report should be studied, then closely examined during the inspection.

B. Examination of Operator Records.

1) A discussion with the operator and review of the records should indicate to the inspector if any business names (are being used) other than the ones appearing in the part 137 Operating Certificate and Web-based Operations Safety System (WebOPSS) paragraph A001.

2) The records shall be located where the operator has designated the principal base of operations. Unusual circumstances may dictate that the records may temporarily be at a different location, and the inspector must use some judgment in evaluating such a situation.

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3) Private agricultural operators are not required to maintain records in accordance with part 137, § 137.71. When reviewing commercial operator records, the inspector may find that the records are copies of bills or invoices sent to the operator's customers. Since there is no set procedure on what form commercial operator records must be, any method used by the operator is satisfactory as long as it maintains the minimum requirements of § 137.71(a)(l), (2), and (3), which includes:

a) Name and address of person to whom services were rendered,

b) Date of service, and

c) Name and quantity of material dispensed.

4) Pilot records are usually kept separate from the operating records, and they must meet the requirements of § 137.71(a)(4). Operators should be encouraged to keep pilot records and dispensing records together to provide a more complete record if it is ever requested.

5) An operator, including a private operator, must present evidence that each person used in the agricultural operations has been informed of their duties and responsibilities.

C. Private Operators. Since a private operator is not required to keep records, the inspector must discuss the private operator's operations in sufficient detail for the inspector to ensure that operations for compensation or hire are not being conducted. The inspector must verify that only the property or the crop, in which the operator has an interest or ownership, is all that is being serviced. Leases or other written agreements can be accepted as proof of bona fide property interest. This has been a weak area in the past, but, in the attempt to ensure compliance, the inspector must take care not to make the discussion seem accusatory. If, on the other hand, the inspector has received complaints about the private operator, the appropriate investigatory procedures must be followed. (See Volume 7, Chapter 5, Conduct a Complaint Investigation; or Volume 7, Chapter 6, Conduct an Investigation of FAA Flight Operations to Determine Compliance, as appropriate.)

D. Aircraft Inspection. A detailed examination of the aircraft is usually conducted by an Airworthiness inspector. However, when circumstances prevent airworthiness from being represented during the inspection, the operations inspector should ensure that all available aircraft and their aircraft maintenance documents are examined for at least a current annual inspection, for installation of seat belts and shoulder harnesses, to ensure that all required equipment is installed and operational, and for a facsimile of the part 137 Operating certificate on board.

1) Original airworthiness and registration certificates are not required to be kept in the aircraft, but they must be available at the base of operations from which dispensing operations are conducted. The test for determining a "base of operations" is the basing of maintenance facilities and personnel.

2) With respect to aircraft modifications, Airworthiness inspectors must be consulted.

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E. Air Traffic Control (ATC) Coordination. The inspector must ensure that the operator has made prior arrangements with airport management and ATC before operating in and around airports.

F. Night Operations. Night operations may be conducted under certain conditions. The following is guidance which is useful for the ASI in assessing the safety considerations of such operations.

1) Agricultural aircraft operating between sunset and sunrise must adhere to the provisions of 14 CFR part 91, §§ 91.205(c)(2) and (3), and 91.209. However, part 137, § 137.47 permits an agricultural aircraft to operate without position lights if prominent unlighted objects are visible for at least one mile.

a) Agricultural aircraft without position lights may conduct takeoffs and landings at airports with a functioning control tower only as authorized by ATC.

b) Takeoffs and landings at uncontrolled airports can be conducted only with the permission of the airport management and when other aircraft operations, requiring position lights, are not in progress.

2) The operator should be encouraged to establish safety practices and procedures for the operator's particular operation, including night operations. The following guidelines are some, but certainly not all, suggestions for these practices and procedures.

a) The field where night operations are to be conducted should be checked from the ground in daylight with the ground personnel, if they are used, or with the supervisor of the operation. A plan for working the field should be developed. The pilot may find it advantageous to diagram the field and indicate the approximate locations of any obstructions, which could affect the safety of the operation.

b) Immediately before a night operation, the pilot should obtain any information available concerning the possibility of a temperature inversion in the area of operation. Inversions cause suspension in the air of dust particles and liquid droplets that can result in an uncontrollable drift problem. Operations should not be conducted in areas of temperature inversions.

c) When chemical dust is dispensed, the resulting cloud could spread in such a way that the horizon, flaggers, or other ground references become obscured. If this condition occurs, the operation must be halted until ground references are once again visible.

d) The operator should establish flight experience qualifications for pilots conducting night operations. For example, an operator may require pilots to acquire 15 to 25 hours in operations in proximity to the area of proposed night operations. Another, more specific qualification would be to require a pilot to work an area during daylight before working the same area at night.

e) Operators should also consider establishing minimum field sizes, based on the number, location, and kind of obstructions, for night dispensing operations. For example,

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1. A relatively small field (1,500 feet by 1,500 feet) may be safe if bounded on only two sides by obstructions.

2. A larger field (1,500 feet by 2,500 feet) could be safe with obstructions on three sides.

3. Operations at fields with obstructions on all four sides should be considered only if the field is 2,500 feet by 2,500 feet or larger.

4. These dimensions are only suggestions and are not standards established by the FAA. The operator should establish standards appropriate to the geographical area where operations are conducted and the type of equipment they are operating.

6-1450 GUIDELINES FOR BASE INSPECTIONS.

A. Coordination. When an Airworthiness inspector cannot attend the base inspection, the operations inspector should tailor the inspection to examine the aspects of an inspection that the Airworthiness inspector would normally do. For example,

1) The inspector should be prepared to examine the equipment, such as the aircraft and dispensing equipment.

2) The inspector should also observe preflight checks performed by the pilots, such as verifying the integrity of the dispersal equipment, loading of the appropriate amounts (weight) of chemicals, etc.

3) The inspector should coordinate with an Airworthiness inspector to ensure follow-up inspections of any items outside of the operations inspector's expertise.

B. Levels of Deficiency and Appropriate Corrective Action. The following are some examples of various deficiencies that might occur in an inspection and the appropriate action to take for the situation. The actions described are based on two assumptions.

1) First, if a discrepancy is found, the base inspection is completed anyway. After inspection, all deficiencies and recommended corrective actions would be summarized in a note to the file and/or in remarks to the PTRS data sheet.

2) Second, an unsatisfactory report often calls for an enforcement investigation. Unsatisfactory reports are usually based on obvious violations found during the inspection. There are intermediate stages between satisfactory and unsatisfactory results, any of which may result in a satisfactory inspection with corrective action.

a) A spot correction involves a discrepancy, which was noted and corrected during the inspection and which was not a violation. Because it was corrected on the spot, it may require no further action. An example of a spot correction might be: The inspector does not find a facsimile of the agricultural aircraft operator's certificate on board the aircraft. The corrective action would consist of the inspector notifying the operator of this discrepancy. During the remainder of the inspection, the operator makes a copy of the certificate and places it in the

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aircraft. No other corrective action would be necessary if the inspector found that no agricultural operations were conducted without the facsimile on board. However, the inspector shall mark the PTRS sheet with an "I" to indicate information. The inspector shall note the discrepancy and the spot correction on the data sheet and/or the job aid.

b) A followup action involves deficiencies or lack of pilot knowledge or skill that do not involve a violation but which requires action other than a spot correction. For example, during the inspection the inspector noted that a required placard was not in place on the aircraft and a replacement for the placard was not readily available. However, there was no evidence that the aircraft had been operated without the placard. The corrective action would consist of the inspector verbally advising the operator that the placard must be in place before the aircraft is operated again. At the office the inspector would confirm this in writing to the operator and schedule a followup inspection to determine if the placard was replaced. The inspector shall mark the PTRS data sheet with an "F" to indicate a followup action.

c) A blatant violation could be cause for a finding of unsatisfactory for the base inspection. For example, during the inspection the inspector finds that a new chief supervisor has been designated and has acted in that capacity but has not completed the knowledge and skill test. The inspector shall mark the PTRS data sheet with an "E" to indicate the inspection resulted in an enforcement investigation. (See Volume 7, Chapter 6 and the current edition of FAA Order 2150.3, FAA Compliance and Enforcement Program.)

C. Discrepancies Between District Office Files and Operator Files. When a discrepancy is found between office records kept on the operator and records maintained by the operator, the inspector shall determine which set of records is current, approved, and correct. The outdated records must be brought up to date. For example, the operator's records indicate a change in the address of the base of operations, of which the FAA was not aware. District office records must be corrected to reflect the current address. The inspector must determine whether an enforcement action is necessary.

6-1451 INITIAL CERTIFICATION VS. LATER SURVEILLANCE. When this task is performed as the base inspection for an original certification (during the demonstration and inspection phase of the certification process), there are necessarily some items that cannot be inspected. For example, an applicant for an agricultural aircraft operator's certificate would not have a certificate or certificate facsimile examined. For an original certification, the inspector marks the "N/A" column on the job aid (Figure 6-71, Part 137 Base Inspection Job Aid) for items that cannot be evaluated.

6-1452 PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. This task requires knowledge of the regulatory requirements of part 137 and FAA policies and qualification as an ASI (Operations).

B. Coordination. This task requires coordination with the Airworthiness unit.

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6-1453 REFERENCES, FORMS, AND JOB AIDS.

A. References (current edition):

- 14 CFR parts 1, 61, 91, and 137,
- PTRS Procedures Manual (PPM), and
- Advisory Circular (AC) 137-1, Certification Process for Agricultural Aircraft Operators.

B. Forms:

- FAA Form 8000-36, Program Tracking and Reporting Subsystem Data Sheet,
- FAA Form 1360-33, Record of Visit, Conference, or Telephone Call, and
- Current Copy of the Pilot's Bill of Rights Notification.

C. Job Aids. Figure 6-71, Part 137 Base Inspection Job Aid.

6-1454 PROCEDURES.

A. Pre-Inspection Activities.

1) Determine the need for the inspection.

- District office work program schedule,
- Requested by the regional office,
- As a result of complaints,
- As part of the certification process, and
- As per the current edition of FAA Order 1800.56, National Flight Standards Work Program Guidelines.

2) Determine if the inspection is to be conducted with or without notice to the operator. Conduct initial certification inspections as per the submitted Schedule of Events.

a) If the inspection is to be conducted with notice to the operator, notify the operator by telephone of the day, time, and nature of the inspection. Record the notification on FAA Form 1360-33 and place it in the operator's file.

b) If the inspection is to be conducted without notice to the operator, schedule the day and time.

3) Review the district office file on the operator for previous violations, complaints, accidents, and other inspection reports. Note any areas which require special attention.

4) Review with the Airworthiness or Avionics units for a plan of action and for any specific problem areas.

5) Open PTRS file.

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B. Conduct Base Inspection. Use the job aid in Figure 6-71 to assist during the inspection.

1) Inspect aircraft (Airworthiness).

2) Determine if chief supervisor and other pilots are qualified (§ 137.19(b) and (c)).

3) Determine if knowledge and skill tests have been conducted and their results (§ 137.19(e)(1) and (2)(b)). For congested area operations, determine that each pilot in command (PIC) meets the experience requirements (§ 137.53(b)(1) and (2)).

4) If the operator conducts congested area operations, determine that the congested area plan has been FAA approved as per Volume 3, Chapter 52, Section 2, Evaluate a Part 137 Congested Area Operations Plan.

5) Determine that the applicant understands the limitations involved with agricultural aircraft operations, which include:

- Limitations on passenger carrying,
- Weight and balance limitations,
- Limitations on operating without position lights,
- Limitations on dispensing in congested areas,
- Limitations on not observing standard airport traffic patterns, and
- Section 91.119 limitations concerning ferrying to and from dispensing sites.

6) Determine that commercial operator records meet the requirements of § 137.71.

7) If all items in the inspection are satisfactory, note the outcome on the job aid.

8) If the inspection is not satisfactory, inform the operator immediately. The outcome on the job aid. Confirm unsatisfactory items in writing to the applicant (Figure 6-72, Letter to Operator Confirming Unsatisfactory Items). Initiate an enforcement investigation, if appropriate. (See Volume 7, Chapter 6.)

C. Debrief Operator. Discuss with the operator any areas needing improvement. Additionally, if applicable, discuss areas which may require an Enforcement Investigative Report (EIR) and the normal enforcement action process.

D. Inspection Reports. Place the job aid and a copy of any correspondence with the operator in the operator's district office file.

E. PTRS. Close PTRS file.

6-1455 TASK OUTCOMES. The satisfactory completion of this task results in either:

- An indication in the district office file that all items were satisfactory, or
- An indication in the district office file of unsatisfactory items.

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6-1456 FUTURE ACTIVITIES.

- Additional inspections on follow up items,
- Additional inspections as per program guidelines, or
- Possible enforcement investigation when inspections reveal a violation of 14 CFR or the conditions of the operating certificate.

Figure 6-71, Part 137 Base Inspection Job Aid

14 CFR PART 137 BASE INSPECTION JOB AID					
NAME OF OPERATOR	CERTIFICATION TEAM Name _____ _____		Specialty _____ _____		
ADDRESS:	_____		_____		
ITEMS INSPECTED	**INSP. INITIAL**	**DATE**	**SAT**	**UN-SAT**	**N/A**
1. Certificate conforms to district office copy.					
2. Chief Supervisor same as district office records.					
3. Operator uses appropriate aircraft.					
a. Aircraft certificated and Airworthy.					
b. Aircraft equipped for agricultural operations.					
c. Inspection of load-carrying or attaching devices.					
d. Inspection of optional equipment installation.					
e. Airworthiness Directives (AD) current.					
f. Inspection of installation and function of spray or diffusion dry dispersal equipment and jettisoning device.					
g. In-house or contract maintenance observed.					
h. Minimum equipment lists current and approved by Web-based Operation Safety System (WebOPSS) paragraph D095.					
i. Certificate facsimiles on board all aircraft used in agricultural operation.					

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Figure 6-71, Part 137 Base Inspection Job Aid (Continued)

4. Chief supervisor and other pilots.					
a. Airman and medical certificate appropriate.					
b. Knowledge test passed (§ 137.19(e)(1)).					
c. Skill test passed (§ 137.19(e)(2)).					
d. Pilots used in congested area operations meet requirements of § 137.53(b)(1) and (2).					
5. Congested area operations conducted.					
a. Operator has Federal Aviation Administration (FAA)-approved plan.					
b. Plan includes approval by appropriate government officials.					
c. Plan provides for air traffic control (ATC) coordination, if required.					
d. Plan includes a complete description of the operation.					
e. Plan lists all aircraft used by make and model and N-number.					
f. Aircraft have current annual and/or 100 hour inspections (§137.53(c)(1)).					
g. Plan lists all pilots used by name, certificate grade, and certificate number.					
h. Plan includes appropriate maps, charts, and diagrams.					
i. Plan has a specific method for halting operation if safety may be compromised.					
k. Plan clearly describes who is conducting the operation and what is being contracted.					

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Figure 6-71, Part 137 Base Inspection Job Aid (Continued)

6. The operator conforms to:					
a. Prohibitions on passenger carrying.					
b. Weight and balance limits.					
c. Limitations on operating without position lights.					
d. Limitations on dispensing in congested areas.					
e. Limitations on not observing standard traffic patterns.					
f. Limitations on restricted category aircraft, if used (§ 91.313(b) and (c)).					
g. Section 91.119 limitations on ferrying to and from dispensing sites.					
7. Commercial Operator Recordkeeping.					
a. Name of each person provided service.					
b. Date service provided.					
c. Name and quantity of material dispensed.					
d. Name of each pilot used and date § 137.19(e) was met.					
e. Records kept for at least 12 months.					
8. Bona Fide Property Interest (Private Operators)					
REMARKS:					
Inspector's Signatures:					

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Figure 6-72, Letter to Operator Confirming Unsatisfactory Items

[*FAA Letterhead*]

[*Date*]

[*Operator's name and address*]

Dear [O*perator's name*]:

This letter is to confirm those items that were unsatisfactory in the base inspection conducted on [indicate date].

[*The inspector should list each item and indicate:*

(a) Whether sufficient corrective action has been taken by the operator,

(b) That enforcement action may be initiated, and

(c) If a followup inspection is required to determine if corrective action has been completed when that inspection will take place.]

Sincerely,

[*Certification Project Manager's signature (if initial certification) or Principal Operations Inspector's signature (if surveillance of an established operator)*]

RESERVED. Paragraphs 6-1457 through 6-1475.

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VOLUME 6 SURVEILLANCE

CHAPTER 12 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 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, Conduct a Complaint Investigation). The inspector must consider the type of operation, whether a congested area is involved (which would include Section 4 (this chapter), Monitor a Part 137 Congested Area Operation), the operation is in daytime or nighttime, etc.

6-1479 INSPECTOR SAFETY CONSIDERATIONS. The nature of agricultural chemicals is that they may be toxic. (See Volume 3, Chapter 52, Section 1, Introduction to Part 137 Related Tasks). Inspectors must take every precaution to assure they are not contaminated by exposure or spillage.

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.

- 14 CFR parts 1, 61, 91, and 137, and
- 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.

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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 which require special attention.

C. PTRS. Enter the appropriate PTRS code to open the task.

D. Job Aids. Use the Dispensing Operation Inspection Job Aid (figure 6-74), the Agricultural Pilot Inspection Job Aid (figure 6-75), and the Agricultural Aircraft Inspection Job Aid (figure 6-76) during the inspection.

1) If a private operator, determine if the operator meets the requirements of 14 CFR § 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).

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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 (part 137, § 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. (part 137, § 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).

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.

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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
- 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.
- 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.

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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 signature]

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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)(e)			
2. Commercial operator meets appropriate requirements.	§ 137.19(c)(d)(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 part 91, § 91.405			
6. Restricted aircraft operating limitations.	Part 91, § 91.313			
7. Weight placard on hopper.	See TCDS and/or AFM for requirements. CAM 8, Appendix B, paragraph .63 and CAM 8.10-4			
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 - DOT/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.			
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.	§ 137.17(e)			
17. Pilot in command (PIC) appropriately certificated for operation.	§ 137.41(c)			
18. Pilots have competency letters or logbook	§ 137.19			

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endorsements.				
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. Other items.				
21. Date of baseline cholinesterase tests				
a. Pilots				
b. Other personnel				
22. Other items				
REMARKS:				

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Figure 6-75, Agricultural Pilot Inspection Job Aid

PILOT NAME	MEDICAL		KNOWLEDGE/SKILL TEST		PILOT CERTIFICATES			FLIGHT REVIEW DATE
	CLASS	DATE	ADMIN. BY	DATE	NO.	GR	RATING	
For pilot certificate (GR), use: P-Private, C-Commercial, A-Airline Transport								

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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 Date _____ Time _____	Part 137, § 137.53(c) or part 91, § 91.409(a)			
2. 100-hour Inspection Date _____ Time _____	Required for Commercial operations.			
3. Airworthiness certificate	§ 137.33(b)			
4. Aircraft registration	§ 133.33(b)			
5. Agricultural Aircraft Operator Certificate facsimile in aircraft	§ 137.33(a)			
6. Placards, hopper maximum weight	CAM 8.10-4(b)(1)(i)			
7. Placards, restricted category aircraft	See CAR/CAM 8, TCDS, AFM, and ICA's for requirements			
8. Shoulder harness	§ 137.31(b)			
9. Compliance with airworthiness directives	Parts 43 and 91			
10. Airspeed indicator	Part 21, § 21.25, CAM 8, App. B, § .51(a)			
11. Carburetor air heat	CAM 8, App. A, § 8.5(c)			
12. FAA Form 337 for all major repairs, alterations, and Supplemental Type Certificates (STC)	Part 43, App.B			
13. Other:				

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Figure 6-77, Letter to Operation 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 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.*
- *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 signature*]

RESERVED. Paragraphs 6-1485 through 6-1500.

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VOLUME 6 SURVEILLANCE

CHAPTER 11 OTHER SURVEILLANCE

Section 23 Evaluate/Inspect 14 CFR Part 91 Subpart K/121/125 and § 129.14 Operators' Fuel Tank System Instructions for Continued Airworthiness/Revisions

6-2691 PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) ACTIVITY CODES. The Federal Aviation Administration (FAA) has developed the following PTRS activity codes for Title 14 of the Code of Federal Regulations (14 CFR) parts 91 subpart K (part 91K), 125, and 129 in order to track and document the initial incorporation of the FAA Oversight Office-approved fuel tank system instructions for continued airworthiness (ICA) into an operator's program.

A. Maintenance: 3363, 3364, 4632.

B. Avionics: 5363, 5364, 6632.

C. Operations Specifications (OpSpecs).

1) Maintenance: 3314, 3315, 3316, 3317.

2) Avionics: 5314, 5315, 5316, 5317.

NOTE: In this section, the terms "operator," "it," and "its" refer to any certificate holder, air carrier, or other entity operating under 14 CFR part 91K, 121, 125, or part 129, § 129.14.

NOTE: The following notes in this section are directed to principal inspectors (PI) and aviation safety inspectors (ASI). PIs and ASIs should use the information in these notes when performing their fuel tank safety (FTS) oversight.

NOTE: As defined in 14 CFR part 26, § 26.3, the FAA Oversight Office is the Aircraft Certification Office (ACO) or the office of the Transport Airplane Directorate with oversight responsibility for the relevant type certificate (TC), Supplemental Type Certificate (STC), or manufacturer as determined by the Administrator.

6-2692 AIR TRANSPORTATION OVERSIGHT SYSTEM (ATOS) FOR PART 121 OPERATORS. ASIs must use Data Collection Tool (DCT) 1.3.2 Safety Attribute Inspections (SAI) or Element Performance Inspection (EPI) questions that pertain to FTS and their associated Job Task Items (JTI). Each specific FTS question's JTI answer response is required to be documented in the related question's comment block. These JTI comments are mandatory (ATOS) tools for the ASI to determine the operator's compliance to the FTS rule.

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6-2693 OBJECTIVE. This section provides specific guidance for ASIs to determine if an operator is in compliance with the Enhanced Airworthiness Program for Airplane Systems (EAPAS)/FTS operating rule and the specific fuel tank system Airworthiness Directives (AD).

6-2694 COORDINATION REQUIREMENTS. This task to determine operator compliance with the FTS rule requires coordination between ASIs, the certificate-holding district office (CHDO)/certificate management office (CMO), the International Field Office (IFO)/International Field Unit (IFU), and operators/geographic units.

6-2695 FUEL TANK SYSTEMS RULE. On May 7, 2001, the Transport Airplane Fuel Tank System Design Review, Flammability Reduction and Maintenance and Inspection Requirements final rule was published. It has since been referred to as the 2001 FTS rule. It adopted amendments to 14 CFR part 25, Special Federal Aviation Regulation (SFAR) 88, and operating requirements related to SFAR 88. The operating requirements included requirements to implement ICAs that design approval holders (DAH) developed in compliance with SFAR 88.

6-2696 SFAR 88 REQUIREMENTS. SFAR 88 requires DAHs to conduct a safety review of the applicable airplanes identified in the rule to determine that their design meets the FTS ignition requirements described in part 25, §§ 25.901 and 25.981(a) and (b). If their design was determined not to meet those requirements, they were required to develop design changes for those noncompliant designs. The FAA is issuing ADs mandating those design changes. Though it is likely that operators will use the DAH's ICAs, the FAA acknowledges that they are able to develop their own or contract third parties to develop alternative but acceptable ICAs.

NOTE: Guidance for operator compliance with the FTS requirments in the EAPAS/FTS rule is contained in the current edition of Advisory Circular (AC) 120-97, Incorporation of Fuel Tank System Instructions for Continued Airworthiness into Operator Maintenance or Inspection Programs.

NOTE: Operators are not required to use the DAH's fuel tank ICAs. They are only required to incorporate ICAs approved by the FAA Oversight Office and required by SFAR 88 or § 25.1529 and part 25 appendix H, into their maintenance or inspection program.

6-2697 GENERAL. On November 8, 2007, the FAA published the EAPAS/FTS rule. The purpose of the rule is to help ensure the continued safety of transport category airplanes by improving the design, installation, and maintenance of electrical wiring systems. The EAPAS/FTS rule amended the operating requirements to implement FTS actions developed in accordance with SFAR 88. It also established new part 26 to support the continued airworthiness of and safety improvements for transport category airplanes. Section 26.11(b) requires integrating the incorporation of the fuel tank system and electrical wiring interconnection system (EWIS) § 25.1701 requirements to ensure compatibility and eliminate duplication.

NOTE: The EAPAS/FTS rule contains SFAR 88 maintenance and inspection instructions to assure the safety of the fuel tank system. The DAH were required by the EAPAS/FTS rule § 26.11(b) to align the fuel tank system instructions developed during the SFAR 88 design review with the EWIS ICA to ensure

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compatibility and minimize redundancies. Some EWISs are also part of the fuel tank system. The requirements for their maintenance and inspection might be more specific than those for wiring in general, and might contain additional requirements.

NOTE: The current edition of AC 120-102, Incorporation of Electrical Wiring Interconnection Systems Instructions for Continued Airworthiness into an Operator's Mainteance Program, addresses the EWIS portion of the EAPAS/FTS rule. ACs are available on the FAA Web site at: http://www.faa.gov/regulations_policies/advisory_circulars.

6-2698 ICA DEVELOPMENT. FAA policy memorandum ANM112-05-001, Policy Statement on Process for Developing SFAR 88-related Instructions for Maintenance and Inspection of Fuel Tank Systems, dated October 6, 2004 provides standardized guidance to the DAH for developing maintenance instructions as a method of compliance with SFAR 88. The policy identified two categories of potential ignition source-related ICAs. These two categories of SFAR 88 ICAs have been referred to as "Unsafe Condition" and "No Unsafe Condition"-related ICAs.

A. Unsafe Condition Category ICAs.

1) Unsafe Condition Category Criteria. The DAHs are required to develop design changes and ICA to address features of the fuel tank system design that are determined to meet the SFAR 88 unsafe condition criteria, and mandated by ADs. These AD-mandated actions could include design changes, operational procedures, or airworthiness limitation items (ALI) containing repetitive maintenance and inspection instructions, or all three. FTS airworthiness limitations include critical design configuration control limitations (CDCCL), inspections, or other procedures that are necessary to prevent the development of ignition sources within the fuel tank system. CDCCLs are a type of fuel tank system airworthiness limitation introduced by § 25.981(b).

2) Including AD-Mandated Actions (PI Action). The PI must ensure that the operator's maintenance/inspection program/manual includes all AD-mandated actions, such as design changes, operational procedures, or airworthiness limitations containing repetitive maintenance and inspection instructions. These repetitive maintenance and inspection instructions allow the operator additional time to accomplish the design change. Operators should be tracking these interim repetitive maintenance or inspection tasks on the specific airplanes during the accomplishment of the design change.

NOTE: Any operator-proposed changes to AD-mandated airworthiness limitations must be handled by the AD alternative method of compliance (AMOC) process through the FAA Oversight Office.

B. No Unsafe Condition Category FTS ICAs.

1) Safety Failure Effects Category (FEC). The DAHs were also required to develop ICAs for all FEC 5 and 8 tasks developed from analysis Maintenance Significant Items

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(MSI). They were developed and based on anticipated consequences of failure logic in Maintenance Steering Group – 3rd Task Force (MSG-3); therefore changes to these categories may have an effect on safety. FEC 5 and 8 tasks address those features of the fuel tank system design that are determined to be a "No Unsafe Condition" but are necessary to maintain the continued airworthiness of the ignition source prevention features of the fuel tank system. The DAH, through the Maintenance Review Board (MRB) process, subjects these MSIs to maintenance program development logic using the latest version of MSG-3. They are FAA Oversight Office-approved. They will normally be found in the DAH's Maintenance Review Board Report (MRBR) or a source document required by part 25 appendix H, § H25.5(b). Inspection tasks, intervals, and task instructions/procedures are developed as a result of this process. AC 120-102 provides information on the source document. The STC ICA will be contained in the FAA-approved STC document.

NOTE: The "No Unsafe Condition" ICAs discussed in subparagraph 6-2698B are the ICAs that the operator must incorporate into their maintenance or inspection program to comply with the fuel tank system operational requirements. (Refer to part 91, § 91.1507; part 121, § 121.1113; part 125, § 125.507; and § 129.113.)

NOTE: For administrative purposes some DAHs have put both the "No Unsafe Condition" and the "Unsafe Condition" category ICAs in their Airworthiness Limitation Section (ALS) mandated by ADs. Therefore they both require the same level of visibility and attention by the operator. Changes to either category must be approved by the FAA Oversight Office as an AMOC to the AD.

2) Operator's AD Tracking System (PI Action). PIs must ensure that the operator's AD tracking system does not draw a distinction between the "No Unsafe Condition" and "Unsafe Condition" category ICAs. Both are mandated by ADs, and require the same level of attention by the operator. The two categories should be clearly identified in the operator's manual/AD tracking system.

a) The first category is the maintenance or inspection program actions to ensure the continued airworthiness of the fuel tank system throughout the operational life of the airplane (see subparagraph 6-2698B).

b) The second category is the unsafe condition and actions required by the AD to prevent development of ignition sources within the fuel tank system (see subparagraph 6-2698A).

6-2699 FUEL TANK SYSTEM AIRWORTHINESS LIMITATIONS. Fuel tank system airworthiness limitations are FAA Oversight Office-approved mandatory CDCCLs, inspections, or other procedures determined necessary to ensure that fuel tank ignition sources do not occur and are not introduced into the fuel system as a result of maintenance actions, repairs, or alterations throughout the operational life of the airplane. This requirement is similar to that contained in § 25.571 for airplane structure and fuel tank system airworthiness limitations are intended to be treated the same as airplane structure airworthiness limitations. Therefore,

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§ 25.981 added a new requirement to part 25 appendix H to require fuel tank system airworthiness limitations in the ALS of the ICAs.

A. AD-Mandated Airworthiness Limitations. While fuel system airworthiness limitations are developed as part of the type certification process (new designs) in compliance with § 25.981, in-service airplanes did not have this requirement for fuel system airworthiness limitations in their certification basis. Therefore, the SFAR 88 required DAHs to develop fuel system airworthiness limitations that the FAA then mandated by ADs. These fuel system ADs require the operator to incorporate the fuel system airworthiness limitations into their maintenance or inspection program. A fuel tank system airworthiness limitation may be a mandatory replacement time, related inspection or procedures, ALI or a CDCCL.

1) Mixed Airplane Fleets (PI Action). Operators with mixed airplane fleets include:

- Those that have fuel system airworthiness limitations in their certification basis (e.g., B-747-800, B-787, etc.).
- Those with fuel system airworthiness limitations mandated by ADs (e.g., 2008-10-11, B-757, etc.).

2) Ensuring Proper Approval Process (PI Action). The PI must ensure that the operator has procedures that track the above-listed models' specific airworthiness limitations separately. This is to ensure that the proper approval process for changes and recordkeeping is used.

NOTE: Operator-proposed changes to AD-mandated airworthiness limitations must be handled by the AD AMOC process through the FAA Oversight Office. Changes to fuel system airworthiness limitations that are part of the airplanes certification basis is a change to the type design of the airplane.

B. Types of Fuel System Airworthiness Limitations. There are three types of fuel system airworthiness limitations. One is an ALI inspection that has a specific task and interval, such as 10 years. A second type is ALI procedures that could have specific task intervals. The third type is a CDCCL that has no interval but establishes configuration limitations to maintain and to protect the "critical design feature" identified in the CDCCL. CDCCLs can also include requirements to have placards on the airplane with information about critical features. (Refer to the current edition of AC 25.981-1, Fuel Tank Ignition Source Prevention Guidelines, for additional information on CDCCLs.)

1) Critical Design Feature Example. The following is an example of a CDCCL critical design feature for a "Legacy Airplane."

a) For an alternating current fuel pump fault current bonding strap installation, the concern is the potential for fault current path through the pump motor housing to structure inside the tank. Electrical faults internal to the fuel pump motor impeller are by design routed through the motor impeller assembly to the bonding straps on the front face of the motor impeller assembly to structure outside the tank. The bonding straps ensure that fault currents are

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conducted to structure outside the tank until the circuit breaker and/or Ground Fault Interrupter (GFI) has had time to remove power from the pump.

b) The following features must be maintained during pump replacement per the manufacturer's Aircraft Maintenance Manual (AMM):

- Install two bonding straps between the pump motor impeller end cap and structure, and
- Verify motor impeller bonding resistance to structure is 0.0004 ohms (0.4 milliohms) or less.

2) Ensuring Critical Design Feature Incorporation (PI Action). PIs must ensure that the critical design features are incorporated into the maintenance or inspection program/manual and adhered to as written. Any proposed operator changes must be approved through an AMOC to the AD. The CDCCL critical design feature identified above is just one of many that are included in the airworthiness limitations for the airplane. The CDCCL's critical design features must be included on the operator's Engineering Orders (EO) and job/task cards.

C. Traditionally Structural Airworthiness Limitations. Traditionally structural airworthiness limitations have a specific task and interval, and are performed as part of a scheduled inspection in a hangar environment. Most fuel system airworthiness limitations will also involve a scheduled inspection in a hangar environment.

D. Unscheduled Maintenance. There will also be times when a fuel system airworthiness limitation that includes a CDCCL will involve unscheduled maintenance such as a fuel pump change at a line station overnight. The fuel pump change requires that the critical design feature identified in subparagraph 6-2699B1) must be accomplished.

E. Safety of Flight. Accomplishment of fuel system airworthiness limitations that include CDCCLs relate directly to safety of flight similar to the Required Inspection Item (RII) requirement in part 121. Operators must consider all airworthiness limitations that include CDCCLs with the same safety consideration and emphasis whether the work occurs during scheduled or unscheduled maintenance or it arises at an inconvenient time or location.

1) Fuel System Airworthiness Limitation CDCCLS (PI Action). PIs must ensure that operators consider all fuel system airworthiness limitation CDCCLs with the same safety consideration and emphasis whether it occurs during scheduled or unscheduled maintenance or it arises at an inconvenient time or location. A means of accomplishing this is to have the operator include subparagraph 6-2699E or a similarly worded paragraph in specific sections of their manual, especially those sections that deal with the accomplishment of both scheduled and unscheduled maintenance.

2) CDCCL Procedures (PI Action). PIs must ensure that operators have procedures in their maintenance/inspection program/manual that ensure that the CDCCL is performed whether it's during scheduled or unscheduled maintenance.

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F. Identifying Critical Design Features. CDCCLs are intended to identify only critical design features of a design that must be maintained. For example, certain components of a fuel pump, or all components of the fuel pump, may include critical design features that are identified as CDCCLs. These critical design features would be identified in the ALS of the ICA as in CDCCLs.

G. Component Maintenance Manual (CMM). Although not intended by the introduction of CDCCLs and other fuel system airworthiness limitations, there are also DAHs that have created certain airworthiness limitations CDCCLs that include both the critical design feature as well as the tasks associated with maintaining the CDCCL. Typically these airworthiness limitations require adhering to a specific CMM at a specific revision level to be used when repairing or overhauling fuel system components. In this case, operators are required to adhere to all elements of the CMM specified in the CDCCL. Any deviations from the CMM specified in the CDCCL, including using later revisions to those CMMs, must be approved by the FAA Oversight Office. Deviations from CMMs specified in the CDCCL may also involve an AMOC to an AD.

H. Primary Source of Information. The ADs require that the fuel system airworthiness limitations be incorporated in the operator's maintenance or inspection program/manual; therefore, this makes the CDCCL the primary source for the critical design feature information. While the critical design feature may also be in the AMM reference, it is not to be used as the primary source of information for the CDCCL critical design feature.

1) Ensuring the Inclusion of Fuel System Airworthiness Limitation Information and References (PI Action). PIs must ensure that the operator has procedures in its maintenance/inspection program/manual that instruct its maintenance program development personnel, who write/revise manuals and job/task cards, and engineering personnel who develop/revise EOs, that all information identified in the fuel system airworthiness limitations and any FAA Oversight Office-approved AMM/standard wiring practice manual (SWPM) references are included. The job/task cards and EOs should be identified as a fuel system airworthiness limitation.

2) Policy Statement (PI Action). The operator should have a policy statement in its manual that cites the following or similarly worded statement: "While the critical design feature may also be in the AMM reference, it is not to be used as the primary source of information for the CDCCL critical design feature." The primary source is the CDCCL.

3) Third Party Airworthiness Limitation (PI Action). PIs must ensure that the operator has procedures in its maintenance/inspection program/manual that address the performance of, and procedures to follow, when a fuel system airworthiness limitation is performed by a third-party contract maintenance/repair station.

I. CMM Specified in the CDCCL.

1) Specific Revision Level. There are also CDCCLs that require a specific CMM at a specific revision level be used when repairing or overhauling fuel system components.

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Operators are required to use the CMM specified in the CDCCL. Any changes to the AD must be approved by an AMOC.

2) CMM Revision Control Procedures (PI Action). PIs must ensure the operator has fuel tank system CMM revision control procedures that ensure the latest CMM revision level identified in the CDCCL is being complied with. In addition, the operator must convey this information to any third-party contractor/repair station performing fuel tank system component maintenance or overhaul work for it.

6-2700 AD REQUIREMENTS. The AD requires revising the ALS of the ICA to incorporate new limitations for fuel tank systems.

NOTE: PIs must ensure that the operator incorporates these fuel tank systems limitations into their maintenance or inspection program in accordance with subparagraphs 6-2700A through D.

A. Fuel Systems Airworthiness Limitations.

1) Maintenance Planning Data (MPD). The information in this subparagraph and subparagraphs 6-2700B and C is based on a transport airplane MPD ALS. It includes explanatory language, which is also referred to as the program rules/front matter, what the fuel system airworthiness limitations are, their regulatory basis, and what they contain. It explains the difference between an ALI and CDCCL. Operators are required by the AD to include this explanatory language into their maintenance or inspection program. This includes appropriate manuals used in the administration of the operator's maintenance or inspection program. Any changes to these program rules must be approved by the FAA Oversight Office.

2) Including Explanatory Language (PI Action). PIs must ensure that the operator's maintenance/inspection program/manual includes explanatory language. This language is "incorporated by reference" in the AD; therefore, it is FAA-approved. Any changes by the operator must be FAA Oversight Office-approved.

B. Format—Fuel System Airworthiness Limitations. This paragraph includes a format in terms of airworthiness limitation number, task, interval, airplane applicability, and description. This is the format used by the DAH and included in the ALS. The operator can use its own format, however as a best practice, it is recommended that the operator include the airworthiness limitation number, task, interval, airplane applicability, and description in its manual or document used in the administration of the maintenance or inspection program. It is especially important that the operator's documents, such as EOs and job/task cards, contain the appropriate format information for the document so that the person performing the task knows the safety significance of the task.

C. Airworthiness Limitations—Fuel System Airworthiness Limitations.

1) ALIs and CDCCLs. This paragraph includes the airworthiness limitations. Some DAHs have separated fuel system airworthiness limitations into two subcategories: ALIs and CDCCLs. In this case, ALIs include only fuel tank airworthiness limitation inspections and

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procedures. The CDCCLs, in some cases, reference FAA Oversight Office-approved data contained in the DAH AMM and the SWPM. Any changes to the approved data in the AMM or the SWPM must be FAA Oversight Office-approved before being utilized. Only the specific data referenced in the DAH, AMM, and SWPM is FAA Oversight Office-approved, not the entire manual.

2) FAA Oversight Office-Approved Changes (PI Action). The PI must ensure that the operator's maintenance program/manual contains instructions for maintenance program development personnel (who write/revise job/task cards), and engineering personnel (who develop/revise Eos, explaining that these references are FAA-approved and any changes must be approved by the FAA Oversight Office).

D. Work Instructions/Procedures. As stated in subparagraph 6-2700C1), AMM and SWPM references in the airworthiness limitations are approved by the FAA Oversight Office. The following subparagraphs should be used as guidance when complying with airworthiness limitations that contain references to AMMs or SWPMs.

1) When the language "in accordance with" or "per" is cited in the CDCCLs, the procedures in the AMM or SWPM must be followed to ensure that the critical design feature is maintained. Any changes to these procedures require FAA Oversight Office approval.

2) When the language "refer to" is cited in the CDCCL, the procedures in the AMM or SWPM represent one method of complying with the airworthiness limitation. An accepted alternative procedure may be developed by the operator in accordance with its procedures in its maintenance program/manual. Prior FAA Oversight Office approval is not required for this action. This does not preclude the PI from coordinating with the FAA Oversight Office before accepting the revision.

3) While all DAHs may not specifically use "in accordance with," "per," or "refer to" when referencing their AMM or SWPM in the CDCCL, the regulatory effect is the same. The fuel system airworthiness limitations are required by ADs and therefore those references are FAA-approved.

a) CDCCLs that use "in accordance with" or "per" to refer to work instructions/procedures can only be changed through an AMOC to the AD.

b) CDCCLs that use "refer to" work instructions/procedures are also FAA-approved, but changes can be made by the operator without further FAA approval (i.e., AMOC).

E. Maintenance/Inspection Program/Manual (PI Action). PIs must ensure that operators have incorporated in their maintenance/inspection program/manual the following:

1) Specific Fuel System Airworthiness Limitations (PI Action). All airplane-model-specific fuel system airworthiness limitations.

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2) Specific References (PI Action). All specific references to FAA Oversight Office-approved fuel system AMM/SWPM work instructions/procedures. (See subparagraph 6-2700D.)

3) FAA Oversight Office-Approval (PI Action). Procedures that clearly delineate between AMM/SWPM work instructions/procedures that must be approved by the FAA Oversight Office and those that can be changed by the operator without FAA Oversight Office approval. (See subparagraph 6-2700D.)

4) Instructions to Personnel (PI Action). The PI must ensure that the operator's maintenance program/manual contains instructions for maintenance program development personnel (who write/revise manuals and job/task cards), and engineering personnel (who develop/revise Eos, explaining that these AMM/SWPM references are FAA Oversight Office-approved. (See subparagraph 6-2700D.)

6-2701 APPLICABLE STCs. The FAA has identified a list of applicable STCs, and the associated amendment dates containing the fuel tank system ICAs. (See Table 6-10, List of Applicable Supplemental Type Certificates.)

NOTE: PIs must ensure that the operator has incorporated the ICA into its maintenance or inspection program. Refer to AC 120-97 for further information on applicable STCs.

6-2702 FIELD-APPROVED AUXILIARY FUEL TANKS.

A. Fuel Tank Installations. In order for an operator to use field-approved auxiliary fuel tank installations after December 16, 2008, the operator must:

1) Perform a design review and develop ICAs that include maintenance, inspections, procedures, and limitations in accordance with SFAR 88 requirements.

2) Submit the ICAs through the PI, who may add comments and forward them to the FAA Oversight Office for approval.

3) Submit its FAA Oversight Office-approved ICA changes to the PI for review and approval.

B. OpSpec/Management Specification (MSpec) D097 (PI Action). The PI will review the operator's ICA changes and approve the incorporation of the changes into the operator's maintenance or inspection program by issuing OpSpec/MSpec D097.

NOTE: When an operator requests a change to the ICAs, the PI will inform the operator to work closely with the FAA Oversight Office to complete a design review. Once completed, the PI authorizes the changes through OpSpecs. If the operator decides to deactivate or remove the auxiliary fuel system, it will require FAA-approved data.

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6-2703 OPERATOR-DEVELOPED SHOP INSTRUCTIONS. In the past, CMMs were accepted by the FAA, not approved. The FAA Oversight Office will approve certain CMMs and certain parts of the CMM in accordance with the requirement in § 25.981(b) to establish CDCCLs.

A. Operator Changes. In certain CDCCLs the entire manual is FAA Oversight Office-approved and a statement is contained in the manual to that effect. The FAA Oversight Office must approve any operator changes to the CMM.

B. Approved FAA Oversight Office Data.

1) Requiring Specific FAA-Approved Data. Another example is a CDCCL where the entire CMM is not FAA Oversight Office-approved, but the CDCCL requires following specific FAA-approved data such as maintenance instructions, inspections, and procedures in the CDCCL and CMM.

2) Shop Manuals and Instructions (PI Action). The PI must ensure that operator-developed shop manuals and instructions that include FAA Oversight Office-approved data are identified as such. Any changes to FAA-approved data in the operators shop manuals must be FAA Oversight Office-approved.

6-2704 EXCEPTIONAL SHORT-TERM EXTENSION OF FUEL TANK SYSTEM AIRWORTHINESS LIMITATIONS.

A. Oversight Office-Approved ALS. An operator may extend certain fuel system airworthiness limitations up to the maximum number of days specified in the applicable ALS for a specific airplane without FAA Oversight Office approval. The FAA Oversight Office-approved ALS includes a statement that explains that the exceptional short term extensions of fuel tank system airworthiness limitations, subject to the procedures in the document, are FAA Oversight Office-approved. The FAA defines an exceptional short-term extension as an increase in a fuel system ALI interval that may be used by the operator to cover an uncontrollable or unexpected situation in which the airworthiness limitation cannot be performed within the ALI timeframe (e.g., an operator's airplane is scheduled for an airworthiness limitation inspection but cannot enter the hangar bay because it is still occupied by another airplane). In this case, the operator, in accordance with the procedures in the ALS, must request an exceptional short-term extension through the PI, who must approve in advance any operator exceptional short-term extension.

B. Exceptional Short-Term Extension.

1) Original Interval. After an operator uses an exceptional short term extension of a fuel tank system airworthiness limitation, that airworthiness limitation interval must revert back to the original interval in the maintenance program. Extensions are only allowed on an individual airplane. Under the procedures in the ALS, repeated use on the same airplane (or similar airplanes) in the operator's fleet is not allowed.

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2) Procedures for Short-Term Extensions (PI Action). The PI must ensure that the operator's maintenance/inspection program/manual has procedures that address short-term extension of airworthiness limitations.

6-2705 OPERATOR REQUIREMENTS TO INCORPORATE FTS ICAs.

A. Maintenance or Inspection Program Revision. Section 121.1113 (and similar provisions of §§ 91.1507, 125.507, and 129.113) states that after December 16, 2008, no certificate holder, air carrier, or operator may operate an airplane unless it has revised the maintenance or inspection program for that airplane to include FAA Oversight Office-approved ICAs for the fuel tank system.

B. MRBR or Maintenance Implementation Document (MID) Revisions (PI Action). The PI must ensure that the operator has incorporated the DAH-developed MRBR or MID revisions or other FAA Oversight Office-approved fuel tank system ICAs into its maintenance or inspection program. The PI will approve the operator's incorporation of OpSpec/MSpec D097.

C. Free Text Area (PI Action). The free text area of OpSpec/MSpec D097 must be used:

- To identify and record the document(s) (by document number, revision number, and date) used as the source of the FAA Oversight Office-approved EWIS/FTS ICA, or
- If this information is contained in the operator's manual system, a reference to that location in their manual system must be recorded in the free text area.

D. Procedures for Tracking Changes and Approvals. The PI must ensure that the operator has procedures in it manual that track any changes and approvals made to the FAA Oversight Office-approved EWIS/FTS ICAs.

6-2706 CHANGES TO OPERATORS' FUEL TANK SYSTEM TASKS, INTERVALS, AND INSTRUCTIONS/PROCEDURES. Fuel tank system tasks resulting from SFAR 88 safety reviews are unique to SFAR 88 since the FTS rule (May 7, 2001) requires FAA approval of any changes. These intervals allow flexibility for operators to perform these maintenance tasks within their normal scheduled maintenance checks.

A. DAH Changes. Normally, throughout the course of an airplane's life cycle, the DAH will make changes to the maintenance program, which will include revising the FAA-approved "source document." Revisions to the source document must be FAA Oversight Office-approved. The operator may also propose changes to its fuel tank system maintenance or inspection program. The operator must submit fuel tank system changes to the PI for review and approval. AD-mandated fuel tank system airworthiness limitations are not required to be approved for OpSpec/MSpec D097.

B. Operator Changes. The operator must have procedures in its maintenance/inspection program/manual that ensure that any changes to fuel tank system tasks are routed through the PI.

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The PI may add comments and then must formally coordinate the changes for approval with the relevant FAA Oversight Office, through the appropriate Aircraft Evaluation Group (AEG).

6-2707 INCORPORATING THE FTS ICAs. The previous version of this section included tables that were meant to provide the PIs with a quick reference to manufacturers' (MRBR and MID) documents to ensure that the correct ones were used on the operator's OpSpec D070. OpSpec D070 will be archived when the new D097, Aging Aircraft Programs is activated. The tables are no longer needed with the new D097 and therefore have been removed by this revision.

6-2708 THE EAPAS FUEL TANK SYSTEM IGNITION PREVENTION TRAINING.

A. Section 121.375. The EAPAS/FTS rule does not have a specific requirement for operator fuel tank ignition prevention training. Section 121.375 sets the standard for a training program to ensure that each person (including inspection personnel) who determines the adequacy of work done is fully informed about procedures and techniques and new equipment in use and is competent to perform their duties.

B. Part 91K. Part 91K also has maintenance personnel training requirements similar to part 121.

C. Section 125.507(a)(1) and (2). Part 125 does not have a maintenance personnel training requirement similar to parts 91K and 121. With an airplane applicability established in the EAPAS/FTS rule (refer to §125.507(a)(1) and (2)), more large, complex transport category airplanes are operating under part 125.

D. Section 121.375 Standards (PI Action). PIs must ensure that the operator has a fuel tank system ignition prevention training program that is consistent with the standard set in § 121.375 and information in AC 120-97.

E. Section 91.1111 or 91.1433 Standards (PI Action). PIs assigned to a part 91K fractional ownership operator to which § 91.1507 applies must ensure that the operator has a fuel tank system ignition prevention training program consistent with the standard set in § 91.1111 or § 91.1433 and information in AC 120-97.

F. Section 125.507 Applicable Operators (PI Action). PIs assigned to part 125 operators to which § 125.507 applies should encourage their operator to develop a fuel tank system ignition prevention training program consistent with the information in AC 120-97.

G. Sections 129.14 and 129.113 Assigned PIs (PI Action). PIs assigned to § 129.14 operators to which § 129.113 applies should encourage their operator to develop a fuel tank system ignition prevention training program consistent with the information in AC 120-97.

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Table 6-10. List of Applicable Supplemental Type Certificates

STC Number	STC Holder	Airplane Models	Description	Operator Actions
ST00069BO	Goodrich Corporation	DC8-62, -62F, -63F, -72, -72F, -73F	Fuel Quantity Indicating System (External to Tank)	STC Amended 1/5/04, Operators must incorporate ICA T3068-0005-01, Initial issue, dated Oct 23, 2003 (or later version). (At D check interval, inspections of flight deck wiring and connectors.)
ST00020BO	Goodrich Corporation	B747-100, -100B, -100B SUD, -200B, -200C, -200F, -300, B747SP & B747SR	Retrofit of Entire Fuel Quantity Gauging System	STC Amended 10/19/04, Operators must incorporate ICA T3070-0005-0101, Initial issue, dated July 2, 2004 (or later version). (At D check interval, inspections of wiring separation, shielding, bonding.)
ST00142BO	Goodrich Corporation	B737-300	Isolation Fuel Quantity Transmitter System	STC Amended 2/10/04, Operators must incorporate ICA T3072-0005-0101, Revision A, dated Jan 22, 2004 (or later version). (Periodic inspections of wiring and bonding.)

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SA298NE	Goodrich Corporation	B727-100, -200	Computerized Fuel Quantity Indicator System	STC Amended 4/19/04, Operators must incorporate ICA T3066-0005-0101, Revision D, dated March 10, 2004 (or later version). (Inspections to determine the condition of the wiring and connector interfaces, every 16,000 flight hours.)
ST00053BO	Goodrich Corporation	B727, -100, -100C, -200, -200F, 727C	FQIS Indicators w/VTO & Optional FSU, In-tank Harnesses	STC Amended 4/19/04, Operators must incorporate ICA T3065-0005-0101, Revision D, dated March 10, 2004 (or later version). (Inspections to determine the condition of the wiring and connector interfaces, every 16,000 flight hours.)

6-2709 TASK OUTCOMES. If not already accomplished, document that the operator has successfully incorporated the FAA Oversight Office-approved FTS ICAs into its maintenance program by approving the incorporation on OpSpec D097.

A. Complete the PTRS Record. For part 91K, part 125, and part 129 operators, open a new PTRS record using the PTRS codes in this section. Enter “FTS” in the “National Use” block of section I. In section IV, the “Comment” block, annotate the following:

1) Document that the operator has incorporated the applicable FTS ICAs into its maintenance program.

2) Record the signature date of the FTS OpSpec.

B. Ongoing Surveillance of Part 121 Air Carriers. To ensure that the air carrier continues to comply with its FTS requirements, accomplish surveillance activities using the FTS questions in ATOS SAI/EPI 1.3.2 and their associated JTIs. Each specific FTS question’s JTI answer response is required to be documented in the related question’s comment block. This will

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enable the PI to evaluate FTS during normal risk-based evaluations of the air carrier's maintenance program in accordance with ATOS policy and guidance.

C. Ongoing Surveillance of Part 91K, Part 125 and Part 129 Operators. To ensure the operator continues to comply with its FTS requirements, accomplish and record surveillance activities using the PTRS codes listed in this section using "FTS" in the "National Use" block. Enter the findings in the PTRS database in accordance with existing procedures.

RESERVED. Paragraphs 6-2710 through 6-2722.

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VOLUME 7 INVESTIGATIONS

CHAPTER 7 CONDUCT VIOLATION INVESTIGATION

Section 1 General

7-221 PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) ACTIVITY CODES.

A. Operations: 1731, 1733, 1734, 1735.

B. Maintenance: 3731, 3732, 3733, 3734.

C. Avionics: 5731, 5732, 5733, 5734.

7-222 OBJECTIVE. This section provides guidance for conducting a violation investigation in accordance with the current edition of Federal Aviation Administration (FAA) Order 2150.3, FAA Compliance and Enforcement Program.

7-223 GENERAL.

A. Definitions.

1) Administrative Action. The action taken when compliance is not present but is attainable, providing the case meets the requirements listed in Order 2150.3.

2) Airworthiness. Since “airworthiness” is not defined in Part A of Subtitle VII of the revised Title 49 of the United States Code (49 U.S.C.), or in the regulations, a clear understanding of its meaning is essential in conducting a violation investigation. A review of case law relating to airworthiness reveals two conditions that must be met for an aircraft to be considered “Airworthy.” These conditions are:

a) The aircraft must conform to its type design (certificate). Conformity to type design is considered attained when the required and proper components are installed and they are consistent with the drawings, specifications, and other data that are part of the type certificate (TC). Conformity would include applicable Supplemental Type Certificates (STC) and field-approved alterations.

b) The aircraft must be in condition for safe operation. This refers to the condition of the aircraft in relation to wear and deterioration. Such conditions could be skin corrosion, window delamination/crazing, fluid leaks, tire wear, etc.

3) Legal Action. The action taken when a disregard for compliance is exhibited, the occurrence is serious enough to affect the safety of persons and/or property, or both.

4) Legal Proceedings. Any proceeding before a court of law, administrative board, commission hearing officer, or other body conducting either a legal or administrative hearing.

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B. Discrepancies. Regional review of Enforcement Investigative Reports (EIR) reveals discrepancies that show a lack of understanding of the Compliance and Enforcement Program procedures. These discrepancies result in the Regional Counsel being unable to take appropriate action due to the following:

- Lack of sufficient evidence, and
- Inadequate reporting of facts and analysis.

7-224 COMPLIANCE AND ENFORCEMENT RESPONSIBILITIES. All FAA employees are responsible for reporting any suspected violations to the appropriate investigating district office and cooperating in a timely manner in the resulting investigation, as required.

A. District Office Inspectors.

1) All inspectors are responsible for the following:

a) Having the knowledge, skill, and ability to counsel and educate the public and aviation industry on how to comply with Title 14 of the Code of Federal Regulations (14 CFR).

b) Preventing violations of the regulations whenever possible. This generally falls into one of two categories:

1. Ensuring that airmen, agencies, and operators are in full regulatory compliance before issuing any certificates or authorizations.

2. Ensuring that regulatory compliance is adhered to through the use of a thorough and systematic surveillance program.

2) Inspectors can only require compliance with the minimum rule, precisely as it is written.

B. Unit Supervisors and Reviewing Principal Inspectors (PI). Immediate supervisors are responsible for ensuring that their subordinates are trained and given proper guidance in the investigation and reporting of violations. Their responsibilities include the following:

1) Tracking the investigation and reporting process to ensure timely progression.

2) Assisting inspectors during the investigation and reporting process by reviewing the report to ensure:

- Completeness and accuracy;
- Preparation in accordance with Order 2150.3; and
- Inclusion of a reference to and a paraphrase of each regulation cited in the EIR, Section B. This is absolutely essential to ensure that a violation has actually occurred and that there are items of proof to support all cited elements of the rule.

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C. District Office Manager. District office managers have the overall responsibility for ensuring the effectiveness and suitability of the Compliance and Enforcement Program in their district. This includes the quality and timeliness of each investigation and report. The district office manager's responsibilities include the following:

1) During the final district office review of the EIR, reviewing each regulation cited to ensure applicability and that items of proof are available to support it.

2) Coordinating with Regional Counsel when there are items that need clarification. A written record of this should be attached to the report.

D. Flight Standards Division. The Flight Standards Division is responsible for the review of all EIRs to determine their adequacy and completeness. Their options include the following:

1) Accepting the report as submitted and forwarding it to Regional Counsel.

2) Not accepting the report and:

a) Calling the district office to request more information or additional items of proof.

b) Returning the report for further investigation or rewrite.

c) Recommending a downgrade to a "no action" or "administrative action" report and returning it to the district office.

d) Revising the report, with proper coordination, to:

- Provide accuracy and completeness;
- Add or delete regulations; and
- Change the recommended action or sanction.

E. Regional Counsel. Regional Counsel reviews the report for sufficiency of the items of proof and appropriateness of sanction. If the counsel determines that the items of proof are insufficient or that any other deficiencies exist in the report, coordination with the division will be required. The reporting inspector may also be contacted to discuss the report and provide clarification and/or additional items of proof.

7-225 DETERMINING THE REGULATION VIOLATED.

A. Determination of Regulation Violated. The first step in analyzing the regulations is to determine what regulation was violated.

1) The investigating inspector must determine what subchapter(s) and part(s) of 14 CFR are appropriate to the situation.

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2) The investigating inspector must be able to determine the general applicability of the subpart(s) of the regulations to prevent citing an inappropriate section.

B. Determining Enforceability.

1) Sections and subsections of the regulations must be carefully analyzed to determine their enforceability. Some regulations are not enforceable because they either confer authority or responsibility or are definitive or explanatory in nature. The rule must contain mandatory or prohibitory language to be enforceable.

a) Restrictive regulations are regulations that categorically state that something "must" be done or adhered to. These regulations can and must be enforced. Restrictive regulations must contain the following types of language:

- "Shall" and "must," because they are mandatory; and
- "No person may" or "A person may not," because they are prohibitory.

b) Permissive regulations are regulations that do not state what must be done or adhered to. The inspector can encourage the use of these regulations to airmen, air agencies, or operators, but cannot enforce them. When used alone, "may" is not enforceable because it is permissive, used to state authority or permission.

2) The four remaining types of regulations consist of the following:

- Conditionally prohibitive language, such as "no person may, except" or "unless," is enforceable only in instances that are not covered by the exceptions;
- Conditionally mandatory language, such as "each person shall, except" or "unless," is enforceable only in instances that are not covered by the exceptions;
- Regulatory language that simply confers authority or responsibility, such as "the aircraft owner is responsible," is used to determine assignment of responsibility; and
- Definitive or explanatory language, such as "this part prescribes" or "each of the following requires," is used to determine regulatory applicability.

C. Elements of Regulations That Must Be Proven. All regulations have specific elements or component words that convey important information that must be proven in order to show noncompliance. In order to determine a violation, the investigating inspector must be able to answer the following questions: who, what, when, where, how, and why.

D. Enforcement of Other Referenced Documents. Occasionally, due to the scope and detail involved, documents other than regulations are incorporated by reference. The legal effect is to require compliance with those documents; however, 14 CFR is the regulation violated, not the reference.

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1) Some regulations reference and require the use of manuals, Service Bulletins (SB), specifications, Airworthiness Directives (AD), etc. Although a person may be required to use these documents, it is the regulation which requires their use that is violated, not the referenced document.

2) The referenced documents in this type of situation become the primary items of proof that must be referenced in EIR sections B and D.

E. Backup Regulations. Title 14 CFR part 91, § 91.125, ATC Light Signals, cannot be violated alone. Noncompliance with § 91.125 must be cited as a backup for § 91.123, Compliance with ATC Clearances and Instructions. In other words, § 91.123 is violated by reason of § 91.125.

F. Conditional Relief Regulations. Some sections give conditional relief for other sections of the regulations. For example, 14 CFR part 137, § 137.51, Operations over Congested Areas: General, for agricultural aircraft operations relieves § 91.119(c) with conditions.

G. Alternative Regulations. Section 91.13 is an alternative type of regulation, the choices being either "careless" or "reckless." These items are not synonymous and the report should be developed to stress the appropriate one or, if applicable, both of them.

1) The National Transportation Safety Board (NTSB) has defined "careless" as "failure to exercise ordinary or proper care."

2) The NTSB has defined "reckless" as "wanton abandonment of concern for the consequences of an act." Additionally, the NTSB has defined that a "reckless" operation results from the operation of an aircraft conducted with a deliberate or willful disregard of the regulations or accepted standards of safety so as to potentially or actually endanger the life or property of another.

H. Section 44709 of Subpart III Part A of Subtitle VII of the Revised 49 U.S.C. Section 44709 of the Act is actually impossible to violate, but, on the basis of § 44709, the FAA can reinspect or reexamine and, when necessary, amend, suspend, or revoke a certificate.

1) If, upon request for a reinspection or reexamination, a person refuses to allow or fails the retesting, an enforcement investigation report must be prepared. Only section A is required to be completed, to include the documentation of the need or justification for the reexamination.

2) Written justification for reexamination or reinspection may be in the form of:

- An accident report;
- An incident report;
- A complaint; and
- An inspector's personal knowledge of suspected or known incompetence.

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I. Intent of the Regulation. Preambles of 14 CFR revisions may be of some help in determining the intent of the rule, but enforcement action can only be taken on what the rule actually says. It may be helpful to include a copy of the pertinent preamble in the items of proof and expound on the intent of the rule in the facts and analysis in section D.

J. Intent of the Alleged Violation. It is very difficult, if not impossible, to prove intent. The FAA cannot normally file a violation on intent, only on the actual occurrence of a violation. The only exception to this is when the rule contains the word "intent."

K. Preponderance of Evidence. There must be more evidence that a violation did occur than there is evidence that it did not occur. For example, one witness statement, even that of an inspector, does not outweigh an alleged violator's statement that there was no violation. There must be other proving or circumstantial evidence to support the violation in order for Regional Counsel to process the report.

7-226 EIR. When preparing the report for review, the inspector should keep in mind that there is an average time limit of 60 days for submittal. This time limit is based on the date the violation was known by the office doing the investigation to the date the report is reviewed and signed by the office manager and forwarded to the region. This time limit is especially critical when submitting reports that recommend certificate action sanctions. Reports closed out with "no action" are less critical and should be ranked by the investigating inspector accordingly.

7-227 EIR SECTION A, FAA FORM 2150-5. Section A is the only section of the EIR that must be used with every violation, regardless of the type of action or sanction, to include a closing of the case with "no action."

A. Multiple Violators at One Time. The "Related Report Number" should be entered only when there is another violation by another person that was a part of the same occurrence. For example:

1) A violation of 14 CFR part 121, § 121.371, Required Inspection Personnel, applies to both the certificate holder and the person performing the inspection. Therefore, both would be in violation of the same rule at the same time.

2) When an occurrence involves more than one person, or a certificate holder and employee, prepare a master report and one or more companion reports. Items of proof common to all related reports need to be included only in the original copy of the master report. The items of proof index of the companion report need only:

a) List the items unique to that report (e.g., enforcement history and airman history).

b) Include a statement that the other documents are in the original copy of the master report.

3) All related violations shall be forwarded to the region at the same time, under the same cover, so that they can be reviewed and evaluated simultaneously.

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B. Form Instructions. Order 2150.3 contains detailed instructions for completing FAA Form 2150-5.

7-228 EIR SECTION B, STATEMENT OF CASE AND FACTORS AFFECTING SANCTIONS. This narrative will include all supporting facts, circumstances, and conditions surrounding the alleged violation and the resulting investigation. The statement of case and factors affecting sanctions will be relied upon by the Flight Standards District Office (FSDO) and Regional Counsel for determining precisely what the appropriate final action and sanction should be. It is therefore essential that the statement of case and factors affecting sanctions be as accurate and as complete as the inspector can make it. The breakdown of section B is as follows:

A. Facts. The narrative for this section is a complete, detailed, factual account of the investigation of the violation. A good summary of facts is vital in assembling a quality investigation and report.

1) Problems with Section B. The main problem associated with section B is the length and content of the statements. Some things to consider when writing this section include the following:

a) The investigating inspector does not have to report every supporting fact in section B. Simply state what the alleged violator did or did not do in violation of the regulations.

b) Section B does have to cover all elements of the violation. Do not try to mix violations covering more than one rule or section in just one statement.

c) When paraphrasing the regulation, simply paraphrase the appropriate section, telling what the person did or did not do to be in violation of the rule.

2) Constructing the Case.

a) Make a concise statement of established facts that are essential to proving the violation of each regulation believed violated.

b) The wording of the summary should tie directly to the wording of the regulation.

c) Show what was done or not done that resulted in a violation.

d) Edit and paraphrase the appropriate section or subsection of the regulations.

e) Ensure that the regulation that relates to the case is not a definitive or explanatory regulation.

f) Be prepared to substantiate the alleged violation with items of proof.

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B. Analysis. This section gives the inspector the chance to express personal opinions and conjecture based on technical knowledge, skill, and expertise. It also provides the opportunity to evaluate and technically analyze the facts as presented in the items of proof and factual narrative. For standardization, the sequence below should be followed:

1) Reliability of Evidence.

a) The inspector should have interviewed witnesses, if available, during the investigation to determine the aeronautical knowledge and experience so their reliability as witnesses could be evaluated.

b) Some evidence is going to vary in strength. In this section, the inspector must explain the strengths and merits of all pertinent items of proof.

2) Conflicting Evidence. Carefully review the entire factual narrative to determine if there is any conflicting evidence.

a) This is the opportunity for the reporting inspector to discuss and reference evidence that is contradictory to the known facts. An example is an alleged violator denying being in violation after receiving a Letter of Investigation (LOI). This is obviously contradictory to the facts that are supporting the investigation, and needs to be referenced.

b) Review the items of proof to determine if there is any conflict regarding the make, model, or registration number of the aircraft involved. Conflicts in names, dates, and times may also occur. Reference and explain any conflict.

c) If there is no conflict in evidence, then simply state that fact.

3) Safety Involvement and Impact. The safety aspects of a violation are of utmost importance. Analyze how safety was or was not affected, and the possible impact on life or property.

a) The technical factors upon which the inspector bases any conclusions should be included, discussed, and referenced as an item of proof.

b) Analyze any endangerment and determine whether it should be classified as actual, inherent, or potential. Actual or inherent endangerment is much more critical than potential endangerment and should be analyzed accordingly.

c) Analyze the “careless” or “reckless” aspects and elaborate on the willfulness, intention, and deliberateness of the violation, if applicable.

d) Consider and analyze the safety impact in regards to the certificate holder’s responsibility.

e) If airworthiness is involved, analyze and evaluate each airworthiness discrepancy with regard to aerodynamic function, structural strength, resistance to vibration and deterioration, and other qualities set by the type design or other approved data.

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4) Mitigating and Aggravating Circumstances. Determine if there are any mitigating or aggravating circumstances involved in the violation or in the investigation, and analyze and report them. If there are no mitigating or aggravating circumstances, state it as such.

5) Opinions, Feelings, and Conjecture.

a) The reporting inspector can include any narrative in the report that the inspector feels will contribute to the allegation. This includes opinions and conjectures, as long as they are labeled as such.

b) When giving an opinion or conjecture, be specific, even when the opinion cannot be completely supported by facts. This includes giving opinions on the following subjects:

- Alleged violator's skill or judgment;
- Proficiency or adequacy of training;
- Lack of qualifications, competency, or both;
- Lack of the proper supervision; and
- Adequacy of the violator's recordkeeping system.

6) History of the Alleged Violator.

a) When possible, personally discuss the violation with the alleged violator, in person, prior to writing the report. This will allow the inspector to visually perceive attitude and gather other personal knowledge of the violator that will be helpful in determining the sanction to be imposed.

b) The past record, attitude towards safety and compliance, the economic status of the person or organization involved, and the cooperation exhibited during the investigation should be included and taken into consideration.

c) Consider and analyze previous violation history and how it may or may not be relevant to this report. If there is no violation history, then state it as such.

d) In every situation in which corrective action has been taken or is in progress, a description of the action should be included along with the inspector's opinion as to its effectiveness.

7) Summarize a Conclusion and Recommendation. In the conclusion and recommendation, the inspector should carefully review and analyze all information that has been included in the report. Keep in mind that this is to be the rationale for the enforcement action and sanction that will be recommended.

a) In all situations, consider whether the sanction is to:

- Remedy;
- Punish; and
- Make an example to discourage future noncompliance.

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b) There are special factors that must be considered before recommending a sanction. For example:

- For a certificate action, how the loss of the certificate might affect the certificate holder's livelihood; and
- For a civil penalty, the person's economic situation.

c) After considering all other factors, the final criteria for imposing a civil penalty should be based on the following factors:

- The violator holds no certificate;
- No question of qualification is involved;
- The case is too serious to handle administratively;
- The suspension is unfair or will create undue hardship; and
- Suspension is not required for aviation safety.

d) When determining what the civil penalty should be, consider the following:

- The appropriate amount of penalty should be based on the facts and circumstances of the case and current agency policy;
- Multiple violations for a single act or omission may be considered one violation if a case does not involve flagrant violations or if the violator holds no certificate; and
- When multiple regulations are cited as a result of separate violations, a civil penalty for each separate violation may be recommended.

e) After considering all other factors, the final determination for a certificate action should be based on the following factors:

- Suspension or revocation action may be taken for punitive or remedial action;
- Suspension may be recommended pending completion of remedial action (retraining, reexamination, etc.); and
- Revocation of a certificate or rating is appropriate when specifically authorized by 14 CFR or evidence establishes a lack of qualifications.

f) When determining what the certificate action should be, consider the following:

- Does safety require it?
- Do technical proficiency or qualifications warrant it?
- Did the certificate holder resist reexamination?
- Was the reexamination not satisfactorily accomplished?
- Is withdrawal of privileges warranted for punitive action?

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- If action was taken by an employer or other agency, should suspension action still be recommended, if warranted? Such action may be considered in determining the extent of suspension or amount of civil penalty.

g) If certificate action is recommended to run concurrently with a company action, include the exact dates of the company suspension.

NOTE: Remember that the "Stale Complaint Rule" for certificate suspension is 6 months from the date of occurrence. Remember that even a serious case can diminish in importance over a period of time.

h) Revocation of a certificate is initiated when:

- The lack of capability is not immediately correctable;
- There is repeated unwillingness or inability to comply;
- There is continued use of certificate, detrimental to the public interest; and
- The person's conduct demonstrates lack of qualification.

i) Emergency certificate actions may be taken only when clearly needed in the public interest. The following urgent considerations apply to all recommended emergency actions:

- The manager, Flight Standards Division, must be notified by telephone immediately when emergency action is contemplated;
- With regional concurrence, action must be taken as soon as the need is recognized;
- Emergency action is not to be used for punitive reasons;
- The inspector must show evidence that the certificate holder lacks qualifications or will continue with noncompliance; and
- An EIR must be completed and processed as soon possible.

j) Other actions are available to the investigating inspector, as warranted. If these other actions are to be imposed, notify the manager, Flight Standards Division, of all facts and circumstances and complete an EIR as soon a possible. This includes any type of complex or emergency type of action mentioned in Order 2150.3. Other actions available can include the following:

- Seizure of aircraft if removal of the aircraft is suspected to prevent payment of a civil penalty or if further flight is contemplated in noncompliance with the regulations;
- Cease-and-desist orders if a violator continues to violate the regulations after other actions have been taken; and
- Order of compliance and injunctions to prevent a violation when there are reasons to believe that one is about to occur.

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k) Criminal prosecution is resorted to in cases of criminal actions and should be turned over to the proper authority for investigation. These criminal actions can include the following:

- Aircraft piracy;
- Interference with flightcrew members or flight attendants (F/A);
- Certain crimes aboard aircraft in flight; and
- Carrying weapons or hazardous materials (hazmat) aboard an aircraft.

l) Drug-related sanctions should be handled in accordance with 14 CFR parts 61, 65, and 91. After notifications of final conviction in a drug-related case, the EIR must be processed.

C. Coordination Requirements. This task may require coordination with:

- Other specialties,
- The assigned PIs, and
- If a geographic unit, with the certificate-holding district office (CHDO).
- Regional program office sanction recommendations should be included in section B, if provided.

D. Enforcement Decision Process Worksheet. FAA investigative personnel include in section B the Enforcement Decision Process Worksheet prepared in accordance with the guidance in Appendix F of Order 2150.3.

7-229 EIR SECTION C, ITEMS OF PROOF. When investigating the alleged violation, gather any data or information that may be pertinent to the case. Do not worry about "Rules of Evidence" at this point in time.

A. Facts and Analysis. To coordinate writing with the facts and analysis and to help readers during the review process, the following guidance should be followed:

1) List the items of proof in chronological order. Start with the record of telephone notification, surveillance report, incident report, complaint, or whatever brought the occurrence to the attention of the FSDO.

2) Add each primary item of proof to the listing as the investigation progresses. Technical supporting items of proof should then be grouped with the primary items of proof to which they relate. The dates on technical supporting items of proof mean nothing as far as chronological listing goes, but they may be important to show the currency at the time of the violation.

B. The Law of Evidence. The Law of Evidence establishes whether items of proof are admissible or acceptable. In general, evidence is only admissible if it is:

- Relevant (i.e., logically related to an issue in the case);
- Material (i.e., significantly related to an issue in the case); and

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- Competent (i.e., of a generally reliable type).

C. Hearsay Evidence. Hearsay evidence is not generally considered to be competent evidence and is not admissible to prove a fact. However, much of the evidence used in FAA civil cases is hearsay and is admissible as exceptions to the hearsay rule. Therefore, all attainable evidence should be gathered. This evidence can be sorted out later, if necessary, by the Regional Counsel.

D. Proving and Circumstantial Evidence. Only salient (proving) evidence should be referenced in the Summary of Facts. The FAA realizes that all evidence is submitted to support that a violation did occur, but it also is submitted for background and circumstances surrounding the event (both mitigating and aggravating). By referencing only salient evidence relied upon to establish an act contrary to a regulation, the need for communications between the FSDO, Regional Office (RO), and Regional Counsel may be lessened.

E. Sufficient Versus Insufficient Evidence. When evidence is insufficient for a legal enforcement action, it is insufficient for any enforcement action. Administrative actions are not a procedure for reporting a violation based on insufficient evidence. If there is insufficient evidence, the case must be closed out with “no action.”

F. Effectiveness of Documentary Evidence. Make copies of pertinent information as soon as possible to prevent documentation from being altered, corrected, or “conveniently lost” after being returned to the alleged violator.

G. Legible and Certified Copies. All copies of items of proof must be legible and official documents or microfilm must be certified. The person making a certified true copy must sign it. Published documents need not be certified but must be legible.

H. Listing All Items of Proof. All copies of items of proof, except physical evidence, must accompany the report. Each item of proof shall be numbered and tabbed consecutively. Each item of proof, including a brief statement of its content and what the item proves, shall be listed in an index to this section of the report. Keep the index in a logical sequence to aid in reviewing the report. Do not mark or deface original items of proof. If marks must be made, use plastic overlays or mark on a copy.

1) Notice of Investigation and Response. In all cases, include the LOI or state in the analysis of section D that an oral notice was given. Always include the violator’s response, which gives the violator an opportunity to explain, excuse, or deny the alleged violation. Document the initial notification and either the following response or lack of response.

NOTE: Oral notification may be used only when it is apparent that no legal enforcement action will be recommended.

2) Enforcement Information Systems (EIS) Information. Always document the violation history of the alleged violator in the EIS. The official violation history may be obtained only through the Accident Incident Data System (AIDS)/EIS Display and Profile.

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3) Background Evidence. Be sure to include any photographs, sketches, drawings, portions of the manufacturer's manual, etc., that will materially contribute to a clear technical explanation of legal evidence.

4) Witness Statements. Interview and obtain written statements from all knowledgeable witnesses or at least a representative number if more than one person witnessed the violation.

a) Select the best witnesses based on their apparent knowledge.

b) If an inspector witnesses a violation or becomes knowledgeable of anything pertinent that is not contained in other witness statements (such as verbal statements made by witnesses, engine teardown, etc.), the inspector should prepare and sign a personal statement.

c) Statements should be complete and concise. They should convey what the person said, did, or perceived. Include the witness's complete name, address, telephone number, occupation, and aeronautical experience. Any opinions should be shown as such.

d) If a witness refuses to sign a statement after it is written, the inspector should ask if they agree to the substance of the statement. If the witness agrees but still refuses to sign, the inspector should make a notation to that effect, date and sign the statement with signatures of any witnesses to the discussion.

5) Photographic Evidence. When photographs are used as essential evidence, it is extremely important to include the following:

- Name(s) and address(es) of photographer(s);
- The date and time the pictures were taken;
- The type of camera and focal length of camera lens (or include brand and type of digital camera used);
- The type of film (or resolution) used; and
- The name of the person with custody of the negatives (or original image files).

6) Charts, Maps, and Diagrams. These can be very helpful, when pertinent, to show airports, terrain, congestion, obstructions, etc. They may also be useful in interviewing witnesses, evaluating their statements, and establishing the degree of hazard involved. Be sure to explain the intended purpose of these items in section D of the report. Always include a copy of the terminal control area (TCA) chart that was current at the time of a TCA violation.

7) ATC Records. It can help if FSDOs establish a written agreement with ATC facilities regarding notification procedures and the procurement of ATC records and tapes as evidence.

a) The FSDO must request, within 15 days following the occurrence, that all pertinent records and tapes be held if there is an indication of a violation. ATC must be advised, within 5 days after the request, whether or not they need to send the records and tapes to the FSDO.

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b) When requesting tapes, ask for only the portion pertinent to the violation. ATC can cut and preserve that portion of the original tape for transcript if needed. A transcript is not needed unless requested by Regional Counsel.

8) National Weather Service (NWS) Records. If weather is a factor in the violation, obtain certified copies of pertinent weather data from the NWS to be included in section D of the report.

9) Aircraft Flight Recorder Information.

a) The FAA is authorized to obtain and use aircraft flight recorder information in any investigation, including enforcement actions (14 CFR part 13, § 13.7). However, this information cannot be used to initiate an investigation when there is no other supporting evidence.

b) Aircraft flight recorder information will not be used as evidence but can be used to corroborate other evidence or to resolve conflicting evidence. Therefore, coordination with the RO is required before use. If used, a certified readout of the information is required.

c) If the NTSB has the information, request the information in accordance with Order 2150.3. During the readout of the information, an FAA representative must be present to testify for authenticity.

10) Cockpit Voice Recorders (CVR). The use of CVR records as evidence in enforcement is prohibited for use in civil penalties or certificate action.

11) Other Government Records. If other Federal or local law enforcement agencies are involved, obtain pertinent records from them. If court proceedings have occurred, obtain the pertinent transcripts and certified copies of any court orders (convictions, etc.). Include copies of any foreign, State, or local laws, as applicable.

12) Medical Records.

a) Medical records usually cannot be obtained without the consent of the individuals or by subpoena. One exception to this is when alcohol or drugs are involved. Under these circumstances, the pilot must consent to provide the pertinent records in accordance with § 91.17(c) and (d).

b) Airman medical information printouts may be obtained from Comprehensive Airmen Information Subsystem (CAIS), or an airman medical form from the Aerospace Medical Certification Division (AAM-300).

c) If the medical records cannot be located through the CAIS or AAM-300, request a “diligent search” certificate from AAM-300 and include it in the items of proof.

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13) Physical Evidence. Ensure that physical evidence is not lost, destroyed, damaged, or altered. Establish a chain of custody if necessary, or lock it up in a secure place. Be sure to take photographs of all physical evidence and include them in the items of proof, along with an explanation of where the evidence is located.

14) Submission of Additional Evidence/Material. Any additional items of proof discovered during the submittal of the report by the district office should be immediately sent to the RO. This should include the inspector's evaluation and recommendations concerning the material.

7-230 REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions):

- FAA Order 2150.3, FAA Compliance and Enforcement Program,
- FAA Order 8020.11, Aircraft Accident and Incident Notification, Investigation, and Reporting, and
- Volume 7, Chapter 1, Section 1, Accident Investigations.

B. Forms. FAA Form 2150-5, Enforcement Investigative Report.

C. Job Aids. None.

7-231 PROCEDURES.

A. Initiate the Investigation of the Alleged Violation.

1) Receive notification of the violation.

2) Write an LOI. Ensure that the letter includes a statement of what the alleged violation consisted of and the assigned EIR number.

NOTE: The regulation(s) violated should not be listed in the LOI.

B. Gather the Supporting Facts. Gather all related information. This can be accomplished by:

- Reviewing records;
- Taking photographs of items associated with the alleged violation;
- Acquiring witness statements;
- Reviewing technical documents (e.g., manufacturer's maintenance manuals, Aircraft Flight Manuals (AFM));
- Interviewing the alleged violator;
- Acquiring technical information from other agencies (e.g., the NWS and ATC); and
- Inspecting physical evidence.

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C. Analyze the Supporting Evidence.

1) Review the data collected to ensure that it is relevant, material, and competent.

2) Review the regulations in conjunction with the items of proof. Ensure that the following questions are answered for each relevant regulation:

- To whom does it apply?
- What does it say in its entirety?
- Where must it be complied with?
- When must it be accomplished?
- How does it apply in this occurrence?
- Are there special conditions?
- Are there exceptions or exclusions?
- Does this regulation clearly apply?
- Are any other regulations applicable to this violation?

3) After this analysis and review, decide if the evidence warrants continuing with the violation investigation. If the evidence is insufficient or inadequate to proceed, close the case with "no action." A "no action" case still requires sections A and B of the EIR to be completed.

D. Initiate the EIR.

1) Section B, Summary of Facts. Make a brief and concise statement of established facts that are essential to proving the alleged regulatory violation.

a) Ensure that the summary of facts:

- Is specific, simple, and positive;
- Contains only one statement for each specific violated subsection of the regulations;
- Has the number of the primary item of proof of the violation following each statement;
- Shows what was done or not done that violated the specified regulation;
- Briefly identifies who, what, when, where, why, and how, as they relate to the violated regulation; and
- States only what is proven in the report.

b) If there is insufficient evidence to prove the violation, close the case with "no action."

2) Section C, Items of Proof. Arrange all items of proof in chronological order, including records of telephone conversations, incident reports, complaints, or whatever brought the occurrence to the attention of the FAA. Include technical supporting items of proof together with the primary items of proof to which they relate.

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a) Ensure that the following items are included, as applicable:

- The initiating document;
- Copy of the LOI or phone call;
- EIS violation history of alleged violator;
- EIS information on the airman or operator;
- EIS information on the aircraft;
- Copy of the operating certificate held by the alleged violator;
- Copy of the pertinent part of the operations specifications (OpSpecs) or waiver, if provisions are believed to be violated;
- Copy of the pertinent part of AD, airman's logbook, SBs, maintenance manual, etc., when maintenance or operational airworthiness is involved;
- City maps, aerial photographs, or both when low-altitude flying is involved;
- A separate signed statement by inspectors when their area of expertise or experience with the alleged violation is involved;
- Expert witness statements if a judgment item is involved, if available;
- A copy of the appropriate en route or sectional chart, or approach chart, when controlled airspace is involved;
- A copy of the accident or incident report;
- All pertinent weather information when weather is involved, including area forecasts with all significant metrological information (SIGMET)/Airmen's Meteorological Information (AIRMET) amendments and terminal forecasts, all amendments for departure point, destination, and along the route of flight including the 2 hours prior to the flight beginning and the 2 hours after it ended;
- All of the documents mentioned in sections B and D of FAA Form 2150-5;
- Airman records' Diligent Search certificate, if applicable;
- Witness statements from all air traffic controllers involved, as applicable; and
- Photographs of the physical evidence.

b) Include a numerical index of all items of proof with a brief statement of contents.

c) Ensure the following:

- The names, addresses, and telephone numbers of all witnesses are listed in the report;
- All items of proof are numbered as such;
- All documents are originals, when possible;
- Copies of official documents are certified; and
- Photographs and original documents are not marked or defaced.

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3) Section D, Facts and Analysis. Ensure that all supporting facts, circumstances, and conditions surrounding the alleged violation and the resulting investigation are included.

a) Facts. Ensure the following:

- All documents in section C, Items of Proof, are referenced;
- All documents referenced in the facts are included as items of proof;
- All pertinent facts and circumstances are described in an organized, chronological order, starting with item of proof #1 and including all pertinent facts from all items of proof;
- The complete factual case history of what the investigation provided is stated in an orderly and logical narrative of each pertinent fact;
- All related investigative actions are included, such as leads followed, what was found during the investigation, and the factual conditions and circumstances surrounding the violation and investigation; and
- That if these items are not documented in witness statements, technical publications, airmen logbooks, manuals, etc., a personally signed statement by the inspector documenting them is included in the items of proof.

b) Analysis. For standardization, this sequence should be followed in writing the analysis:

- Reliability of evidence; and
- Conflicting evidence.
- Safety involvement and impact;
- Mitigating and aggravating circumstances;
- Opinions, feelings, and conjecture;
- History of alleged violator; and
- A summarized conclusion and recommendation.

NOTE: At this point, if there is no clear preponderance of evidence, evaluate the evidence carefully to determine if the case should be closed out with “no action.”

E. Submit Report for Review. Submit the report within 60 days. Before submission of the report, inspect the package to ensure the following:

a) A numerical index of all items of proof, with a brief statement of contents, is included.

b) Each item of proof is numbered as an item of proof.

c) All items are listed in a logical order.

d) All originals of documents are included, if possible.

e) Copies are certified when appropriate.

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f) All photographs of physical evidence are included.

g) All items of proof referenced in the report are included and are referenced in the facts and analysis.

7-232 TASK OUTCOMES.

A. Complete the PTRS Record.

B. Complete the Task. Completion of this task can result in the following:

- Closing out the report with a “no action”; and
- Submitting the EIR package for review.

C. Document the Task. File all supporting paperwork in accordance with Order 2150.3.

7-233 FUTURE ACTIVITIES. Follow up on requests from region, Regional Counsel, etc.

RESERVED. Paragraphs 7-234 through 7-250.

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VOLUME 8 GENERAL TECHNICAL FUNCTIONS

CHAPTER 5 GENERAL AIRWORTHINESS AND AVIONICS TECHNICAL FUNCTIONS

Section 6 Process a Service Difficulty Report

8-425 PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) ACTIVITY CODES. For detailed information on the Service Difficulty Reporting System (SDRS), refer to the current edition of Advisory Circular (AC) 20-109, Service Difficulty Program (General Aviation).

NOTE: For the purpose of this section, the term "operator" includes operators, air carriers, repair stations, and General Aviation (GA).

A. Maintenance: 3325 / 3326.

B. Avionics: 5325 / 5326.

8-426 OBJECTIVE. This section provides guidance on how to process a Federal Aviation Administration (FAA) Form 8070-1, Service Difficulty Report, and provides guidance for the use of the Service Difficulty Report (SDR) Web site, located at http://av-info.faa.gov/SDRx.

NOTE: The principal inspector (PI) should ensure that the operator is aware of the Internet Service Difficulty Reporting System (SDRS).

8-427 GENERAL. The completion of an SDR requires a careful review by the operator of the discrepancy and supporting data. An effective evaluation of the extent of the problem and its causes is essential for determining corrective action.

NOTE: The SDRS is intended to be predictive of service-related malfunctions, defects, or failures that occur as a result of aircraft/system operation. Damage that occurs due to accidental causes (e.g., a belt loader punching a hole in the fuselage skin) is not considered a reportable item.

A. Reporting. The reporting requirements for certificate holders to submit an SDR are contained in Title 14 of the Code of Federal Regulations (14 CFR) part 121, § 121.703, part 135, § 135.415, and part 145, § 145.221. Certificate holders should also have procedures in their manual to report items found while an aircraft is undergoing a scheduled or heavy maintenance check.

NOTE: Repeat problems affecting the same type aircraft, powerplant, propeller, appliance, or system must be reported after each occurrence to enable the Aviation Data Systems Branch (AFS-620) to detect possible trend items.

B. Submitting Reports. Section 121.703(d) requires each certificate holder to submit each report required by this section, covering each 24-hour period, beginning at 0900 local time

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of each day and ending at 0900 local time on the next day, to the FAA offices in Oklahoma City, OK.

1) Each report of occurrences during a 24-hour period shall be submitted to the collection point within the next 96 hours. However, a report due on Saturday or Sunday may be submitted on the following Monday, and a report due on a holiday may be submitted on the next work day. This reporting schedule is understandable for aircraft operating in a line operation environment, where single component failures or damage are generally identified, diagnosed, and corrected in a short time frame.

2) The reporting deadlines mandated by § 121.703(d) do not take into account the circumstance in which aircraft are undergoing scheduled maintenance visits and are out of service for extended periods of time. Aircraft undergoing heavy maintenance inspections are brought to a maintenance, repair, and overhaul (MRO) facility and "opened up" for thorough inspection. Items that constitute corrosion, fatigue, stress, or other damage are meticulously evaluated, and appropriate corrective action is planned and accomplished. The nature of a scheduled maintenance inspection visit is much different than a line operation environment.

NOTE: The intentions of the reporting requirement of § 121.703(d) will be met when an aircraft is scheduled out of service for more than 72 hours due to maintenance, preventive maintenance, or alteration activities; when the required reporting is accomplished within 96 hours of completing the aircraft log; or when signature of an airworthiness release is accomplished (the aircraft has been returned to service).

C. Submission of a Report. The operator submits an SDR. The operator shall submit the reports directly to the FAA offices at Oklahoma City. Although FAA Form 8070-1 or FAA Form 8010-4, Malfunction or Defect Report, until supplies of the form are exhausted, can be filled out manually and mailed to the address in this document, the preferred method of submission is for the information to be submitted electronically through the Internet SDRS (http://av-info.faa.gov/SDRx). This system is managed by AFS-620. Reportable discrepancies are listed in §§ 121.703 and 135.415, as well as the corresponding regulatory requirements. For consistency, 14 CFR parts 91 and 125 operators should also report the items listed in § 121.703.

NOTE: Although not mandatory for part 91 GA, it is strongly encouraged that service-related failures, malfunctions, and defects found by any maintenance personnel on any aircraft, engine, appliance, part, or product, etc., regardless of the operating rule, are reported utilizing this system.

D. Evaluation of the Data.

1) Although the operator can enter information directly into the Internet SDRS, or a § 145.221 repair station on behalf of the operator, this bypasses the certificate-holding district office's (CHDO) review. The PI is still responsible for periodically reviewing the SDR data. The inspector should use the Internet SDRS's Ad hoc Query function to review individual operator's reports. The Safety Performance Analysis System (SPAS) SDR Database Query can also be used.

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NOTE: The PI will document this review by filing a 3325 PTRS record in the Enhanced Flight Standards Automation System (eFSAS), including the Air Transportation Oversight System (ATOS).

2) If the initial evaluation indicates a serious airworthiness problem, the FAA Aircraft Certification Office (ACO) and Aircraft Evaluation Group (AEG) responsible for the product must be informed of the equipment service difficulty and any recommendations for corrective actions. Corrective action recommendations may include the following:

- Airworthiness Directives (AD);
- Product modifications;
- Revised inspection techniques;
- Directed safety investigations;
- ATOS Design Assessments (DA) (if applicable); and
- ATOS Performance Assessments (PA) (if applicable).

NOTE: PIs for air carriers whose oversight is conducted under the ATOS should include a review of the reports submitted to the SDRS during the development of their Comprehensive Assessment Plan (CAP) and during the quarterly planning review as outlined in Volume 10, Chapter 2, Section 2.

E. Checking for Trends. The primary purpose of the SDRS is to help identify negative trends so that mitigating actions can be accomplished as soon as possible. If an evaluation of data indicates possible negative trends, the PI should review prior reports for similar irregularities (e.g., vendor problems, manufacturer equipment problems, training, and/or procedural problems).

8-428 PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. Knowledge of the SDR process and equipment involved.

B. Coordination. This task may require coordination with Operations inspectors, other district offices, certificate management offices (CMO), AFS-620, the FAA ACO and appropriate AEG, and equipment manufacturers.

8-429 REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions):

- Title 14 CFR Parts 43, 91, 91 subpart K (part 91K), 121, 125, 129, 135, and 145;
- Manufacturer’s and operator’s manuals;
- AC 20-109, Service Difficulty Program (General Aviation); and
- SDR Web site at http://av-info.faa.gov/SDRx.

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B. Forms:

- FAA Form 8070-1, Service Difficulty Report-Aeronautical Equipment; and
- FAA Form 8010-4, Malfunction or Defect Report, (for GA only, as long as supplies last).

C. Job Aids. None.

8-430 PROCEDURES.

A. Electronic Transmittal of the SDR. SDR Internet reporting is available to operators at http://av-info.faa.gov/SDRx. AFS-620 will provide information and assistance to operators desiring to input data electronically.

NOTE: Although optional electronic reporting does not alter the reporting requirements of § 121.703, and the FAA still accepts the paper FAA Form 8070-1, which is still available for use, the preferred method of data submission is through the SDR Web site because the electronic transmittal will measurably reduce the time between service difficulties and database entry.

1) For reports that are submitted electronically, the database can be updated with supplemental information by revising the original report and submitting it by using the same operator control number. The computer will display the operator control number and overwrite the original record with the corrected information.

2) For more information concerning electronic transmittals, contact AFS-620 by email at 9-AMC-SDR-ProgMgr@faa.gov; by phone at 405-954-4391; by fax at 405-954-0073; or by mail at:

Manager, Aviation Data Systems Branch (AFS-620)
P.O. Box 25082
Oklahoma City, OK 73125

B. Conduct an Investigation. If the evaluation indicates that followup action is required to determine the cause of the discrepancy, inspect the following areas, as applicable:

- Aircraft, engine, propeller, components, and accessories;
- Appropriate maintenance records;
- Maintenance procedures;
- Training procedures and records; and
- Vendor sources.

C. Identify and Correct Discrepancies.

1) If the investigation reveals inadequacies in the operator's maintenance or inspection procedures, ensure that procedures are changed to prevent a recurrence of the discrepancy.

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2) If the investigation reveals a lack of training and/or inadequate training, evaluate the training program and incorporate procedural changes to correct the deficient areas.

3) If the investigation reveals a serious manufacturing defect, contact the following immediately:

- The appropriate Regional Office (RO),
- AFS-620, and
- The appropriate engineering branch.

8-431 TASK OUTCOMES.

A. Complete the PTRS Record. Regardless of the method used to review the SDR (i.e., FAA Form 8070-1, FAA Form 8010-4, or the SDR Web site), the task will be documented by filing a 3325/3326 or 5325/5326 PTRS record in eFSAS (including ATOS).

B. Complete the Task. Completion of this task may result in the following:

- Followup action for discrepancies, and
- Enforcement action for regulatory noncompliance.

C. Review Operator Data on the SDR Web Site.

D. Review the Electronic SDR Data Submissions. Review the data submissions of assigned operators to ensure that all related information is complete and timely, and in accordance with §§ 121.703(d), 125.409(b), 135.415(d), and 145.221(a), as applicable.

E. Document the Task. The PI must review the submissions as required by §§ 121.703(d), 125.409(b), 135.415(d), and 145.221(a), as applicable, and document that review by filing a 3325/3326 or 5325/5326 PTRS record in eFSAS.

8-432 EMERGENCY. In the unlikely event there is an emergency problem or outage of the SDRS, please submit your SDRs to the following emergency email and fax:

- Email: 9-AMC-AFS-SDR@faa.gov.
- Fax: 405-954-0073.

NOTE: As a reminder, AFS-620 in Oklahoma City (not the local Flight Standards District Office (FSDO)) must receive all SDRs within 96 hours.

8-433 FUTURE ACTIVITIES. None.

RESERVED. Paragraphs 8-434 through 8-447.

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VOLUME 10 AIR TRANSPORTATION OVERSIGHT SYSTEM

CHAPTER 1 GENERAL

Section 1 Air Transportation Oversight System Doctrine

10-1 PURPOSE. This section explains the underlying policy, concepts, and principles for the Air Transportation Oversight System (ATOS).

10-2 STATUTORY AUTHORITY. Title 49 of the United States Code (49 U.S.C.) and Title 14 of the Code of Federal Regulations (14 CFR) provide the statutory and regulatory authority for ATOS, respectively. Title 49 U.S.C. is broad in scope and contains the codified provisions of the Federal Aviation Act of 1958, which prescribes the powers and authorities of the Federal Aviation Administration (FAA). Title 14 CFR is prescriptive in nature and contains the specific requirements to obtain an air carrier operating certificate and standards for conducting related operations. ATOS is not a separate safety standard and does not impose additional requirements on air carriers. ATOS imposes only requirements that are either explicit or implicit in the statute or the regulations. ATOS provides FAA inspectors with standardized protocols to evaluate air carrier programs required by regulations to be approved or accepted by the Administrator. The following requirements in 49 U.S.C., Chapter 447, Safety Regulation, are particularly pertinent to ATOS.

A. Title 49 U.S.C., § 44702, Issuance of Certificates. "When issuing a certificate under this part, the Administrator shall consider the duty of an air carrier to provide service with the highest possible degree of safety in the public interest…."

B. Title 49 U.S.C., § 44705, Air Carrier Operating Certificates. "The Administrator of the Federal Aviation Administration shall issue an air carrier operating certificate to a person desiring to operate as an air carrier when the Administrator finds, after investigation, that the person properly and adequately is equipped and able to operate safely under this part and regulations and standards prescribed under this part."

10-3 POLICY STATEMENT OF THE FAA AS IT PERTAINS TO PROMOTING AVIATION SAFETY FOR AIR CARRIERS. ATOS is based on the explicit policy of the FAA, which states: "The FAA will pursue a regulatory policy, which recognizes the obligation of the air carrier to maintain the highest possible degree of safety." ATOS implements FAA policy by providing safety controls (i.e., regulations and their application) of business organizations and individuals that fall under FAA regulations. Under ATOS, the FAA's primary responsibilities are: (1) to verify that an air carrier is capable of operating safely and complies with the regulations and standards prescribed by the Administrator before issuing an air carrier operating certificate and before approving or accepting air carrier programs; (2) to re-verify that an air carrier continues to meet regulatory requirements when environmental changes occur by conducting periodic reviews; and (3) to continually validate the performance of an air carrier's approved and accepted programs for the purpose of continued operational safety.

10-4 ATOS CONCEPTS AND PRINCIPLES. ATOS relies on the following concepts and principles.

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A. Definitions of Safety and Risk. Safety is the state in which the risk of harm to people or property damage is reduced to, and maintained at or below, an acceptable level through a continuing process of hazard identification and risk management (RM). In this context, an air carrier's duty to provide service with the highest degree of safety in the public interest means that the air carrier must identify hazards in its operating environment and manage associated risks. Similarly, an air carrier's ability to manage risk is an important part of the FAA's determination to ensure that the air carrier is equipped to operate safely under 49 U.S.C., and the regulations and standards prescribed by 49 U.S.C.

B. System Safety. Properly designed systems control hazards by eliminating or mitigating associated risks before they result in accidents or incidents. In an operational context, air carriers fulfill their duties to provide service with the highest degree of safety in the public interest by designing their operating systems to manage hazard related risks in their operating environments. These concepts are fundamental to ATOS.

C. Safety Attributes. The key to safety lies in managing the quality of safety critical processes. This is a primary responsibility of an air carrier in meeting its regulatory obligations. ATOS employs six safety attributes to evaluate the design of air carrier operating systems:

1) Procedures. Documented methods to accomplish a process.

2) Controls. Checks and restraints designed into a process to ensure a desired result.

3) Process Measures. Used to validate a process and identify problems or potential problems in order to correct them.

4) Interfaces. Determine if the air carrier identifies and manages the interactions between the process and the other related element processes within the air carrier organization.

5) Responsibility. A clearly identifiable, qualified, and knowledgeable person who is accountable for the quality of a process.

6) Authority. A clearly identifiable, qualified, and knowledgeable person who has the authority to set up and change a process.

NOTE: The attributes are not standards in and of themselves, but provide a structure for the tools used to collect data for principal inspectors (PI) so that they can make informed judgments about the design of an air carrier's operating systems (1) before approving or accepting them when required to do so by the regulations, and (2) during recurring assessments for continued operational safety.

D. Focus on an Air Carrier's Organization and Processes. In addition to issuing certificates, monitoring compliance, investigating noncompliance, and administering sanctions for noncompliance, FAA oversight must also focus on an air carrier's organization and process management. Outputs and outcomes are still monitored, but the emphasis is on maintaining a safe process or correcting deficiencies. Performance Assessments (PA) must supply objective evidence of both the adequacy and inadequacy of processes.

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E. Open System Perspective. A successful, open system adapts to the needs of the environment and its resources. Safe operation in the modern aviation environment requires constant adaptation. Air carriers are obligated to provide systems that defend against the hazards of their operating environments, including adapting to changes in the environment. Data Collection Tools (DCT) should provide information on current environmental risks and on the air carrier's efforts to control them.

F. Data Sharing. The FAA is responsible for reaching an independent assessment of an air carrier's qualification to hold an operating certificate and its continuing ability to comply with regulations and standards. The FAA may accomplish its independent assessments using data provided by an air carrier or a third party, provided a qualified FAA inspector validates all of the data. Data sharing and open communication optimize the function of the oversight system and leverage resources to advance safety.

G. Primary Stakeholder and Beneficiary. The U.S. public is the primary stakeholder in and beneficiary of ATOS. The FAA carries out its safety mission with due regard to its accountability to the public. The high level of safety required by statute is in the interest of the public. FAA employees involved in ATOS are responsible to determine on behalf of the public that air carriers can provide service with the highest possible degree of safety.

H. Freedom of Information Act (FOIA). Requests for records made under FOIA are processed in accordance with the FAA, the Department of Transportation (DOT), and Government-wide directives and guidance. The current edition of FAA Order 1270.1, Freedom of Information Act Program, provides guidance that governs processing requests for FAA records under FOIA.

RESERVED. Paragraphs 10-5 through 10-19.

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VOLUME 10 AIR TRANSPORTATION OVERSIGHT SYSTEM

CHAPTER 1 GENERAL

Section 5 Acronyms, Abbreviations, Terms, and Definitions

10-78 Acronyms and Abbreviations. The following acronyms/abbreviations and definitions apply to the Air Transportation Oversight System (ATOS):

Figure 10-9. Acronyms and Abbreviations

Acronym/Abbreviation	Definition
AC	Advisory Circular
ACAT	Air Carrier Assessment Tool
ACEP	Air Carrier Evaluation Process
ACOP	Air Carrier Oversight Profile
ADI	Assessment Determination and Implementation
AFS	Flight Standards Service
AFS-1	Director of Flight Standards Service
AFS-40	Flight Standards Quality Assurance Division
AFS-500	Flight Standards Training Division
AFS-900	Flight Standards National Field Office
AQP	Advanced Qualification Program
ASA	Aviation Safety Assistant
ASAP	Aviation Safety Action Program
ASIAS	Aviation Safety Information Analysis and Sharing
ASI	Aviation Safety Inspector
ASI-AD	Aviation Safety Inspector – Aircraft Dispatcher
ASI-AV	Aviation Safety Inspector – Avionics
ASI-CS	Aviation Safety Inspector – Cabin Safety
ASI-MX	Aviation Safety Inspector – Maintenance
ASI-OP	Aviation Safety Inspector – Operations
AST	Aviation Safety Technician
ATOS	Air Transportation Oversight System
AW	Airworthiness
CAD	Continuous ATOS Development
CAP	Comprehensive Assessment Plan
CAR	Civil Aviation Regulation
CAS	Continuing Analysis and Surveillance
CATT	Corrective Action Tracking Tool
CD	Air Carrier Dynamics
CFR	Code of Federal Regulations
CHDO	Certificate-Holding District Office
CMO	Certificate Management Office
CMT	Certificate Management Team
ConDOR	Constructed Dynamic Observation Report
CPD	Certification Process Document

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Acronym/Abbreviation	Definition
CPM	Certification Project Manager
CPT	Certification Project Team
CSI	Cabin Safety Inspector
CSOP	Certification Services Oversight Process
CTL	Certification Team Leader
DA	Design Assessment
DCT	Data Collection Tool
DEPM	Data Evaluation Program Manager
DOD	Department of Defense
DOR	Dynamic Observation Report
DP	Designated Person
DQG	Data Quality Guidelines
EC	Environmental Criticality
EFIS	Electronic Flight Information System
eLMS	electronic Learning Management System
EMP	Essential Maintenance Provider
EPI	Element Performance Inspection
ETOPS	Extended Operations
eVID	enhanced Vital Information Database
FAA	Federal Aviation Administration
FLM	Front Line Manager
FOIA	Freedom of Information Act
FSAS	Flight Standards Automation System
FSDO	Flight Standards District Office
GPS	Global Positioning System
HAZMAT	Hazardous Materials
ICAO	International Civil Aviation Organization
IEP	Internal Evaluation Program
InFO	Information for Operators
MEL/CDL	Minimum Equipment List/Configuration Deviation List
MIS	Mechanical Interruption Summary
MNPS	Minimum Navigation Performance Specification
MSL	Mean Sea Level
NTSB	National Transportation Safety Board
OAG	Official Airline Guide
OpSpecs	Operations Specifications
OPT	Oversight Prioritization Tool
ORA	Operations Research Analyst
OS	Operational Stability
OST	Office of the Secretary of Transportation
PA	Performance Assessment
PAC	Preapplication Checklist
PASI	Preapplication Statement of Intent
PH	Performance History
PI	Principal Inspector

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Acronym/Abbreviation	Definition
PMT	Project Management Tool
PTRS	Program Tracking and Reporting Subsystem
RMP	Risk Management Process
RVSM	Reduced Vertical Separation Minimums
SAFO	Safety Alert for Operators
SAI	Safety Attribute Inspection
SASO	System Approach for Safety Oversight
SAT	System Analysis Team
SDR	Service Difficulty Reporting Subsystem
SPAS	Safety Performance Analysis System
SRR	Specific Regulatory Requirement
TC	Team Coordinator (SAI)
U.S.C.	United States Code
VDRP	Voluntary Disclosure Reporting Program

10-79 Terms and Definitions. The following terms and definitions apply to ATOS.

Figure 10-10. Terms and Definitions

Term	Definition
Acceptable Risk	The level of risk that is allowed to persist after controls are applied. Risk is acceptable when further efforts to reduce it would degrade the probability of success of the operation, or when a point of diminishing returns has been reached.
Aging Aircraft	An aircraft of any make or model that is 15 years old or older.
All-Cargo Operations	Any operation for compensation or hire that is other than a passenger-carrying operation. If passengers are carried, they are only those specified in Title 14 of the Code of Federal Regulations (14 CFR) part 121, § 121.583(a).
Air Carrier Assessment Tool (ACAT)	The ACAT documents a systematic review of the air carrier system elements using the risk indicators to identify conditions that may be creating hazards.
Air Carrier Configuration Checklist	A checklist provides the principal inspector (PI) or certification project manager (CPM) with series of questions to answer that pertain to the air carrier's or applicant's type of operation, types of aircraft and equipment, facilities, personnel, and other operations specifications (OpSpecs).
Air Carrier Dynamics	Aspects of the organization and environment that the air carrier directly controls and could enhance system stability and safety.
Air Carrier Maintenance Provider	Any person whom the air carrier has made arrangements with for the accomplishment of any of its maintenance, preventive maintenance, or alterations.
Air Carrier Oversight Profile (ACOP)	A tailored list of elements and Data Collection Tool (DCT) questions that apply to a specific air carrier or applicant.
Air Carrier Programs and Procedures	The subsystem (3.1) by which an air carrier ensures compliance with its programs and procedures for functioning within its operating environment.

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Term	Definition
Air Carrier System	A group of interrelated processes that are a composite of people, procedures, materials, tools, equipment, facilities, and software operating in a specific environment to perform a specific task or achieve a specific purpose, support, or mission requirement for an air carrier. For the purposes of new certification and continued oversight, seven air carrier systems have been defined, including: 1.0 Aircraft Configuration Control. 2.0 Manuals. 3.0 Flight Operations. 4.0 Personnel Training and Qualifications. 5.0 Route Structures. 6.0 Airman and Crewmember Flight, Rest, and Duty Time. 7.0 Technical Administration.
Aircraft	The subsystem (1.1) by which an air carrier ensures that its aircraft meet airworthiness and operational safety requirements.
Aircraft Configuration Control	The system (1.0) by which an air carrier maintains the physical condition of the aircraft and associated components.
Airman and Crewmember Flight, Rest, and Duty Time	The system (6.0) that prescribes time limitations for air carrier employees.
Airman and Crewmember Limitations	The subsystem (6.1) by which an air carrier ensures that airmen or crewmembers meet the regulatory time limitations.
Air Transportation Oversight System (ATOS)	The system the Federal Aviation Administration (FAA) uses to provide regulatory oversight of part 121 air carriers.
Applicant	An individual, group, or organization seeking new operating authority or, in the case of an existing air carrier, a modification to their operating authority.
Approved Routes/Areas	The subsystem (5.1) by which an air carrier ensures that it maintains the facilities to support its approved routes and areas of operation.
Aviation Safety Information Analysis and Sharing (ASIAS)	A facility for the integration, analysis, and sharing of aviation safety data and information.
Authority Attribute	A clearly identifiable, qualified, and knowledgeable person with the authority to establish and modify a process.
Baseline Date	The date automatically generated from the Certificate Management Team's (CMT) initial Comprehensive Assessment Plan (CAP). It is updated when the bottom-line assessment, with appropriate action, is documented for Design Assessments (DA) and Performance Assessments (PA).
Certificate Management Team (CMT)	This team is responsible for the oversight functions of a specific air carrier. The CMT develops and executes a CAP tailored to a specific air carrier.
Certification Process Document (CPD)	An electronic document with work instructions to be accomplished during the certification process.

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Term	Definition
Certification Project Manager (CPM)	The CPM is the primary FAA spokesperson throughout the ATOS initial certification process. The CPM is responsible for ensuring that all certification job functions are complete.
Certification Project Team (CPT)	This team is responsible for the oversight functions of a specific applicant during initial certification. The CPT develops and executes a CAP (CAP tailored to an applicant's proposed operation).
Comprehensive Assessment Plan (CAP)	The applicant or air carrier-specific assessment plan developed by the CPT or CMT during initial certification or at the annual planning meeting. The CAP documents the planned assessments for the applicant or air carrier at the system element level.
Constructed Dynamic Observation Report (ConDOR)	The ConDOR allows data collection activities to be requested or assigned with instructions to inspect and report on specific areas of immediate concern outside of the normal assessment schedule.
Contract Maintenance	Any maintenance, preventive maintenance, or alterations accomplished by an "air carrier maintenance provider."
Control Attribute	Checks and restraints that are designed into a process to ensure a desired result.
Corrective Action Tracking Tool (CATT)	This tool is used to track corrective actions required of the certificate holder that result from DAs and PAs, or other oversight functions that are not required to be tracked by another system. The CATT cannot be used to replace documentation requirements specified in other guidance.
Crewmember and Dispatch Qualifications	The subsystem (4.3) by which an air carrier ensures that crewmembers and dispatchers are qualified.
Criticality	The likelihood that a failure of an air carrier system, subsystem, or element could lead to an unsafe condition.
Data Collection Tool (DCT)	DCTs are tools such as Element Performance Inspections (EPI), Safety Attribute Inspections (SAI), ConDORs, and Dynamic Observation Reports (DOR) that support DAs and PAs.
Data Evaluation Program Manager or Data Reviewer	The CPT or CMT member responsible for reviewing inspection reports and records to ensure they meet data quality guidelines (DQG).
Design Assessment (DA)	The ATOS function that measures an applicant's or air carrier's operating systems at the element level for compliance with the full intent of regulations and safety standards, including the requirement to provide service at the highest level of safety in the public interest.
Due Date	The required or expected completion date for DAs or PAs.
Dynamic Observation Report (DOR)	The DOR allows inspectors to record certain observations outside the comprehensive assessment planning process. These observations may involve any part 121 air carrier at any location, at any time.
Data Quality Guidelines (DQG)	These guidelines help determine the acceptable levels of data quality during the evaluation of inspection records. See Volume 10, Chapter 2, Section 6, Table 10-1, Specific Data Requirements Table, and Table 10-2, Data Dimensions Table.
Essential Maintenance	Essential maintenance encompasses any Required Inspection Item

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Term	Definition
	(RII) accomplished on wing after any maintenance or alteration. This maintenance, if done improperly or if improper parts or materials were used, would result in a failure effect that would endanger the continued safe flight and landing of the airplane. Essential maintenance is the accomplishment of the air carrier designated inspection item on wing. Essential maintenance does not encompass any off-wing maintenance.
Essential Maintenance Provider (EMP)	An EMP is a maintenance provider who is used by the part 121 air carrier to accomplish the inspection portion of an on-wing RII.
Element	One or more interrelated actions completed to support an air carrier subsystem. Elements are the level that design and performance is assessed for all part 121 carriers.
Element Performance Inspection (EPI) Data Collection Tool (DCT)	The ATOS tool designed to collect data to help the CPM or PI determine if an air carrier adheres to its written procedures and controls for each system element, and that the established performance measures for each system element are met.
En Route Inspection	An inspection of the in-flight operations of a certificate holder within the total operational environment of the air transportation system.
Environmental Criticality (EC)	Aspects of the air carrier's surroundings that could lead to or trigger a failure in one of its systems, subsystems, or elements, and potentially create an unsafe condition.
Flight Operations	The system (3.0) that pertains to aircraft movement.
Front Line Manager (FLM)	FLMs provide first-level supervision to subordinate employees and manage the activities of one operating unit, project, or program area. FLMs report to middle or senior managers.
Gate	A set of prerequisites to proceed to the next step.
Ghost Icon	This symbol (commonly referred to as a "Ghost Icon") represents a DA that was scheduled in a previous quarter, but not resourced, and this element should compete for resources in the current quarter. This symbol will appear to the right of the green line and on the due date of the "missed" assessment meaning at the end of the quarter, not 30 days later. The symbol appears only in Draft and Final versions of the CAP and does not appear in history or in reports. When the cursor is placed over the symbol, the date of the missed assessment appears. The ghost icon has no other automation functionality.
Ghost Icon	This ghost icon symbol represents a PA that was scheduled in a previous quarter, but not resourced, and this element should compete for resources in the current quarter. This symbol will appear to the right of the green line and on the due date of the "missed" assessment, meaning at the end of the quarter, not 30 days later. The symbol appears only in the Draft and Final versions of the CAP and does not appear in history or in reports. When the cursor is placed over the symbol, the date of the missed assessment appears. The ghost icon has no other automation functionality.
Hazard	A condition, event, or circumstance that could lead or contribute

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Term	Definition
	to an unplanned or undesired event.
High Criticality	A high likelihood that a failure in this element could lead to an unsafe condition.
Human Factors	The relationship between people and their operating environment (e.g., people, procedures, materials, tools, equipment, facilities, and software).
Identified Risk	A level of risk that is identified through various analysis techniques.
Information for Operators (InFO)	An InFO message contains valuable information for operators that should help them meet administrative requirements or certain regulatory requirements with relatively low urgency or impact on safety. InFOs contain information or a combination of information and recommended action to be taken by the respective operators identified in each individual InFO.
Interfaces Attribute	The air carrier identifies, documents, and has a method to evaluate the impact of changes on related processes.
Job Task Item (JTI)	JTIs are bulleted items below many DCT questions to detail the tasks that may be performed to properly answer the question. The inspector is required to answer the higher-level EPI or SAI question and should use the attached JTIs as guidance only.
Key Personnel	The subsystem (7.1) by which an air carrier ensures that qualified management and technical personnel with operational control are in place and conducting operations at the highest level of safety.
Low Criticality	A low likelihood that a failure in this element could lead to an unsafe condition.
Maintenance Organization	The subsystem (1.3) by which an air carrier ensures the continuous airworthiness and servicing of aircraft in accordance with its approved procedures.
Maintenance Personnel Qualifications	The subsystem (4.1) by which an air carrier ensures maintenance personnel are properly certificated and authorized to perform assigned duties.
Manual Management	The subsystem (2.1) by which an air carrier prepares and maintains the manuals for the use of and guidance to its personnel.
Manuals	The system (2.0) for controlling the information and instruction that defines and governs air carrier activities.
Medium Criticality	A moderate likelihood that a failure in this element could lead to an unsafe condition.
Mitigate	Action is needed to reduce the level of risk.
Monitor	The risk level is within accepted limits and no action is required beyond the normal planning cycle.
Off Hour	Activities that occur outside of normal FAA duty hours, including weekends.
Operations Research Analyst (ORA)	The ORA is responsible for assisting the CMT in collecting and analyzing air carrier data.
Operational Control	The exercise of authority over initiating, conducting, or terminating a flight.
Operational Release	The subsystem (3.2) by which an air carrier ensures all activities

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Term	Definition
	required for safe dispatch and continuation of a flight to its destination.
Operational Risk	An identified risk that has the potential to affect the operations of the air carrier.
Operational Stability	Aspects of the air carrier's organization and environment that they do not directly control and when managed effectively, could enhance system stability and safety.
Operations Specifications (OpSpecs)	Legal and binding contract between an air carrier and the FAA that documents specifically how the air carrier operation is conducted.
Other Programs	This subsystem (7.2) is used to determine if the operator's Safety Program (Ground and Flight) meets all applicable requirements of 14 CFR, incorporates the safety attributes, and identifies any shortfalls in the operator's procedures (Ground and Flight).
Outsourcing	The practice of contracting out internal air carrier programs, processes, and traditional air carrier functions, such as maintenance, training, and ground handling to external, independent vendors, suppliers, and contractors. Oversight for the quality of the overall process remains with the air carrier.
Oversight Prioritization Tool (OPT)	Use of the OPT is optional. Only one OPT is required for each air carrier when the PI chooses to use the OPT. It is advisable that the PI utilize the OPT or their normal risk-based prioritization methodology. When the PI utilizes the OPT for planning surveillance, it can assist in: 1) Prioritization of air carrier maintenance providers to determine specific data collection requirements, 2) Identifying areas of concern or criticality, and 3) Providing data that allows the PI to target resources toward maintenance providers with the highest risk.
Passenger-Carrying Operation	Any aircraft operation carrying any person, unless the only persons on the aircraft are those identified in § 121.583(a). An aircraft used in a passenger-carrying operation may also carry cargo or mail in addition to passengers.
Preapplication Statement of Intent (PASI)	The completed PASI is a document used in initial certification that denotes an intent by the applicant to initiate the certification process and which allows the FAA to plan activities and prepare to commit resources.
Performance Assessment (PA)	The ATOS function that measures an applicant's or air carrier's operating systems at the element level to confirm that the air carrier is following its procedures and that they are producing the intended result.
Performance History	The results of the air carrier's operations over time.
Performance Measure	A description of the desired outcome of an air carrier element process. It is used to determine whether the desired results of that process were achieved.
Personnel Training and Qualifications	The system (4.0) by which air carrier personnel are trained and qualified.

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Term	Definition
Principal Inspector (PI)	The PI is the primary FAA spokesperson and decision maker for his or her specialty in all applications of ATOS.
Procedures Attribute	Documented methods for accomplishing a process.
Process	Policies and procedures designed to produce a desired result or end product for an air carrier.
Process Measurement Attribute	The air carrier measures and assesses its processes to identify and correct problems or potential problems.
Ramp Inspection	An inspection of a certificate holder's operation while the crewmembers and aircraft are on the ground. A ramp inspection is an effective method for evaluating a certificate holder's ability to prepare both the aircraft and crew for a flight to be conducted.
Random Inspections	Random inspections are unplanned cockpit en route inspections, cabin en route inspections, ramp inspections, or spot inspections. With management authorization, ATOS 1.2-trained part 121 air carrier inspectors may perform these inspections on any part 121 air carrier at any location, at any time.
Records and Reporting Systems	The subsystem (1.2) by which an air carrier manages the records used to show that the aircraft are Airworthy, reflect the air carrier's use of its procedures, and ensure the issuance of required reports.
Responsibility Attribute	A clearly identifiable, qualified, and knowledgeable person who is accountable for the quality of a process.
Risk	An expression of the severity of potential consequences and the likelihood of their occurrence that could result if a hazard is not addressed or corrected.
Risk Analysis	The injury and damage potential of the events related to the hazards in terms of the likelihood of occurrence and the severity of resulting consequences.
Risk Assessment	The process by which the results of risk analysis is used to make decisions.
Risk Factors	The risk factors identify what must be fixed or controlled in order to reduce the level of risk.
Risk Indicator	A grouping of safety- and/or performance-related data that reflects an area of potential risk that is expected to have sufficient data or justification to calculate a representative value for a particular air carrier system, subsystem, or element.
Risk Likelihood Values	Frequent—Continuously experienced. Probable—Will occur often. Occasional—Will occur several times. Remote—Unlikely, but can reasonably be expected to occur.
Risk Management (RM)	An interactive management activity dedicated to ensuring that risk is identified, documented, eliminated, or controlled within defined program risk parameters.
Risk Management Process (RMP)	This process is the ATOS function that identifies hazards and ensures that the air carrier either eliminates the hazards or controls the associated risk at acceptable levels. This process also allows the FAA to manage resources in accordance with risk-based priorities.

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Term	Definition
Risk Severity Values	High—Loss (or breakdown) of an entire system or subsystem, accident, or serious incident. Medium—Potential moderate damage to an aircraft, partial breakdown of an air carrier system, or violation of regulations or company rules. Low—Potential poor air carrier performance or disruption of the carrier's operations.
Route Structures	The system (5.0) by which an air carrier maintains facilities on approved routes.
Safety	The state in which the risk of harm to persons or property damage is reduced to, and maintained at or below, an acceptable level through a continuing process of hazard identification and RM. The quality of a system that allows the system to function under predetermined conditions with an acceptable level of risk.
Safety Alert for Operators (SAFO)	A SAFO is an information tool that alerts, educates, and makes recommendations to the aviation community. This community includes air carrier certificate holders, fractional ownership program managers, and 14 CFR part 142 training centers.
Safety Attributes	The qualities of a system, (e.g., authority, responsibility, procedures, controls, process measurements, and interfaces) that should be present in well-designed air carrier systems and processes.
Safety Attribute Inspection (SAI) Data Collection Tool (DCT)	The ATOS tool used to collect data about regulatory compliance in order to assess the adequacy of the design of the processes associated with each system element for an air carrier. The tool is organized in accordance with six safety attributes.
SAI Team	The team of inspector(s) or a single inspector assigned to accomplish an SAI for a specific CPT or CMT.
Scope of Operation	Description of an applicant or air carrier's activities in air commerce.
Show Cause Order	In determining the "fitness" of an applicant for air carrier authority, the Office of the Secretary of Transportation (OST) examines four areas of the applicant's business: managerial competence, operating and financial plans, the compliance record, and ownership structure.
Spot Inspection	Inspect in-progress maintenance operations for compliance with specific methods, techniques, and practices in the certificate holder's inspection and maintenance programs.
System	A group of interrelated processes which are a composite of people, procedures, materials, tools, equipment, facilities, and software operating in a specific environment to perform a specific task or achieve a specific purpose, support, or mission requirement for an air carrier.
System Analysis Team (SAT)	A team that includes participants from the CMT, the air carrier, other FAA organizations, and other non-FAA entities (e.g., the manufacturer) to accomplish further analysis and determine root causes of system deficiencies.
System Approach	The structured, safety-driven means by which the FAA certifies

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Term	Definition
	and conducts oversight activities on elements that are designed to interact predictably within the air carrier's systems and subsystems.
System Reconfiguration	The air carrier may be required to modify its system, or the FAA may modify its authorizations.
System Safety	The application of special technical and managerial skills to identify, analyze, assess, and control hazards and risks associated with a complete system. System safety is applied throughout a system's entire life cycle to achieve an acceptable level of risk within the constraints of operational effectiveness, time, and cost.
System Stability	The state of balanced constancy and safety that results when an air carrier is able to effectively manage both the aspects of their organization and their environment—those that they control directly and those over which they have no direct control.
Technical Administration	The system (7.0) for addressing all other aspects of air carrier certification and operations.
Training Program	The subsystem (4.2) by which an air carrier ensures that personnel are trained to perform assigned duties in accordance with the air carrier's approved programs.
Transfer	To reassign the risk to another entity that has the authority to address the risk.
Unacceptable Risk	Risk that cannot be tolerated by the managing activity. It is a subset of identified risk that must be eliminated or controlled.

RESERVED. Paragraphs 10-80 through 10-94.

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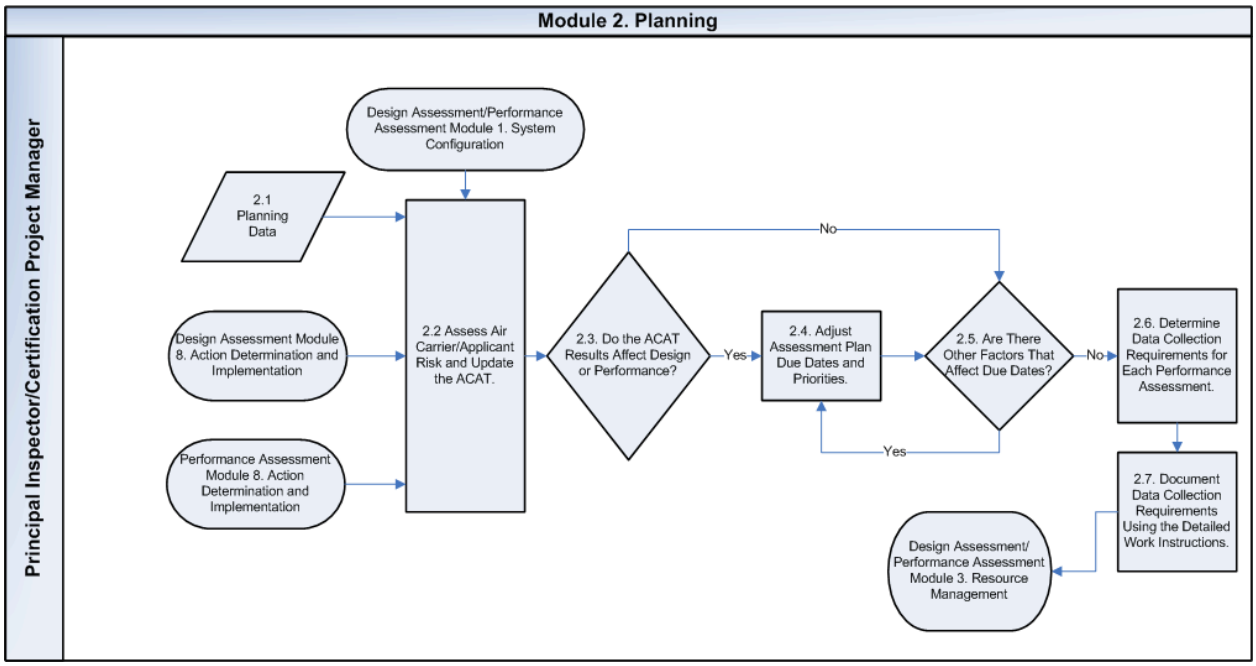
VOLUME 10 AIR TRANSPORTATION OVERSIGHT SYSTEM

CHAPTER 2 PROCEDURES FOR DESIGN AND PERFORMANCE ASSESSMENT

Section 2 Design and Performance Assessment Planning

Figure 10-15. Module 2: Planning



10-117 INTRODUCTION. The planning process develops a risk-based data collection plan to support Design Assessments (DA) and Performance Assessments (PA).

A. Assess the System and Operating Environment. The first step in this process is to assess the air carrier's or applicant's systems and operating environment for indications of hazards or conditions that may create hazards. This process helps to highlight any area on which to focus special oversight attention, and is used to prioritize the elements. The 28 risk indicators contained in the Air Carrier Assessment Tool (ACAT) help determine the special focus areas. (See Figure 10-16, Risk Indicator Quick Reference Guide.)

B. Use the Comprehensive Assessment Plan (CAP). The CAP is a tool for planning, documenting, and tracking DAs and PAs. The principal inspector (PI) or certification project manager (CPM) uses the CAP to adjust priorities and due dates of assessments, and to record the reasons for making adjustments.

10-118 PLANNING DATA. The PI or CPM assembles a design or performance planning data package from the Safety Performance Analysis System (SPAS) and other sources. The Operations Research Analyst (ORA) assists as required. The planning data packages provide information to consider when assessing an air carrier's or applicant's systems and operating environment for hazards. The data are used to update the ACAT and CAP during the annual

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planning meeting and quarterly planning review. Refer to the Risk Indicator Report for the risk indicator score, the percentage of increase above baseline, and the CAP priority at https://avssharepoint.faa.gov/afs/AWP/ATOS. The PI or CPM should consider the percentage of increased risk when prioritizing the work program in the CAP. The data are organized by risk indicator and by system, subsystem, and element. (See flowchart process step 2.1.)

A. Source of Planning Data. Another important source of planning data is input from the Certificate Management Team (CMT) or Certification Project Team (CPT) members.

B. Data Reports Systems.

1) The PI, CPM, and other assigned aviation safety inspectors (ASI) must use the information from the following sources during their annual planning meeting and quarterly planning reviews:

- SPAS Voluntary Disclosure Reporting Program (VDRP) Query and Browse function,
- SPAS Air Transportation Oversight System (ATOS) Data Package,
- The Commercial Aviation System Profile (CASP) Report, and
- Information for Operators (InFO) or Safety Alerts for Operators (SAFO) applicable to the air carrier or applicant.

2) The SPAS ATOS Data Package and SPAS VDRP Query and Browse function are accessible through the SPAS database. (Future enhancements are planned for the SPAS VDRP Query and Browse function.) The CASP Report consists of aggregate level information that is published on a quarterly basis. It includes current status and trended historical data. Inspectors can compare the aggregate CASP Report data to carrier-specific data accessible through the SPAS performance measures, profiles, and reports.

NOTE: The CASP Report is available at: https://employees.faa.gov/org/linebusiness/avs/offices/afs/divisions/hq_region/afs20/media/CASP.pdf.

C. Concern Status. If any SPAS flags are in the concern status, the PI should determine what led to the flag being in this status and what information is necessary to understand the concern status. The PI or CPM makes a determination regarding any action needed to address the issues raised by the concern status flag. In some cases, the PI may be aware of circumstances that led to the concern status, while in other cases a review of underlying data, other performance measures, or additional information may be required.

D. Initial Certification Planning Meeting. The CPT holds an initial planning meeting following the formal application meeting to assess the applicant's systems and operating environment. During the meeting, the CPT completes the initial ACAT and CAP using the application package and other data.

E. Annual Planning Meeting. The CMT holds an annual planning meeting to assess the air carrier's systems and operating environment using the ACAT, to review the CAP, and to

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conduct recurrent training as necessary. This team-based approach provides checks and balances. Other important goals for this meeting include building and improving team skills, establishing team norms, communicating CMT expectations, and sharing information. All CMT members should participate in the annual planning meeting whenever circumstances permit. Some members of the CMT may have to meet more often if they need to retarget planned data collection or collaborate on other oversight issues. Document attendance at the annual planning meeting in a manner acceptable to the office manager.

F. Quarterly Planning Review. PIs conduct a quarterly planning review that determines if a changed condition for the air carrier can impact the ACAT or the CAP. The air carrier's performance history, including the results of recent DAs and PAs, is accessible through ATOS data packages and the Assessment Determination and Implementation (ADI) Tool. PIs must also consider applicable InFOs or SAFOs that were published during the quarter.

10-119 ASSESS AIR CARRIER/APPLICANT RISK AND UPDATE THE ACAT. PIs and CPMs use a series of risk indicators to identify conditions in an air carrier's or applicant's systems or operating environment that may create hazards. The risk indicators contain inspector consideration word pictures and a risk scale that guides the PI in completing the tool. The PI uses the results of the ACAT as an input to determine the priority and planned due date of DAs and PAs in the CAP. (See flowchart process step 2.2.)

A. Risk Indicators. Risk indicators are groupings of safety- and/or performance-related data that reflect areas of potential hazards and prioritize air carrier oversight plans.

1) Risk Indicator Categories. The two major categories for risk indicators (System Stability and Operational Risks) reflect the notion that internal and external events affect air carrier systems. Two subject areas further subdivide the categories. These subject areas focus the indicators on the operational, performance, and environmental risks most likely to impact an air carrier's systems.

a) The System Stability category is divided into Operational Stability (OS) and Air Carrier Dynamics (CD).

1. OS—Organizational and environmental factors the air carrier cannot control directly, but can effectively manage to improve system stability and safety.

2. CD—Organizational and environmental factors the air carrier can directly control to improve system stability and safety.

b) The Operational Risks category is divided into Performance History (PH) and Environmental Criticality (EC).

1. PH—Measures the results of the air carrier's operations over time.

2. EC—Aspects of the air carrier's operating environment that may lead to or trigger a systemic failure.

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2) Risk Indicator Format. All risk indicators use a standard format. Each risk indicator contains a condition statement and background material, inspector consideration word pictures, a risk scale, references, possible data sources, and suggestions for determining the impact of that indicator on air carrier systems, subsystems, and elements. The complete set of risk indicators is at the end of this section.

3) Inspector Considerations. The inspector considerations are word pictures for each risk indicator to provoke thought and aid assessment; they are neither exhaustive nor conclusive. A rating scale corresponds to the word pictures. On the rating scale, the number one represents the lowest level of concern, while number seven represents the highest level of concern. If the indicator does not apply, the lowest level of concern is assigned.

B. ACAT. The ACAT is an automated tool used to record the PI's or CPM's assessment of elements using the risk indicators and calculate a risk score. The risk score is used to prioritize elements for planning certification and oversight activities.

1) ACAT Frequency. The ACAT is completed during initial certification and updated when the air carrier certificate is issued. After that, the ACAT undergoes an annual update, quarterly review, and a revision when there are any major changes to the risk indicators.

2) ACAT Comments. CMT members may review and comment on the ACAT at any time throughout the year. During each quarterly review, the PI should consider CMT member comments.

3) Completing the ACAT. The PI or CPM reviews the risk indicators to determine if any of the conditions apply to the air carrier or applicant. The PI or CPM selects the appropriate word picture and risk value after determining that the condition exists and that the risk indicator applies to one or more of the air carrier elements. An alternative way to complete the ACAT is to review each element and determine if any of the risk indicators apply to a particular element. Either way, the PI or CPM should explain the rationale for a selection in the "Element Notes" text box on the ACAT. The PI or CPM can complete this review in one sitting or save the ACAT as a draft and return to it after reviewing and gathering more data. After completing the initial ACAT, the PI or CPM revises only those risk indicator values that have changed. After making the necessary changes, the PI or CPM finalizes and saves the ACAT.

10-120 DETERMINE IF THE RESULTS OF THE ACAT AFFECT DESIGN OR PERFORMANCE. See flowchart process step 2.3.

A. DA. The PI or CPM should evaluate the results of a modified ACAT to determine the impact on the air carrier's system design. If the ACAT results affect DAs, the PI or CPM determines whether the assessment plan baseline dates or priorities need adjustment.

NOTE: The following only pertain to initial certification.

1) Elements Related to Federal Aviation Administration (FAA)-Approved Programs or Operations Specifications (OpSpecs). Elements that pertain to FAA-approved manuals or programs, or that are related to OpSpecs, are assigned the highest priority.

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Instructions for these Safety Attribute Inspections (SAI) will state that the CPT must verify the supplied data for each question.

2) Additional High-Priority Elements. The CPM may select additional elements that were identified as high-priority in the CAP. Instructions for these SAIs will state that the CPT must verify applicant-supplied data.

3) Remaining Elements. At a minimum, instruction for all remaining elements will require verification of the following:

- Applicant self-audited SAI data for the procedure questions (section 1), and
- Any questions related to specific regulatory requirements.

B. PA. If the ACAT results do not affect design, the PI or CPM determines if the ACAT results affect performance. If so, the PI or CPM should follow the process for planning PAs. If the ACAT affects neither design nor performance, adjusting the plan baseline dates or priorities may not be necessary.

10-121 ADJUST ASSESSMENT PLAN DUE DATES AND PRIORITIES. The PI or CPM can adjust the DA and PA plan due dates and priorities based on the results of the ACAT or other factors. (See flowchart process step 2.4.)

A. The CAP. The CAP is a 5-year plan that for each element contains a planned DA and a planned PA using audit-based intervals to determine when an assessment is due.

1) Baseline Intervals.

a) DA. The baseline interval for all DAs is once every 5 years. Once the initial DA for an element is complete, the PI or CPM must schedule and complete all ATOS DAs in a 5-year frequency, unless the PI or CPM documents in the ATOS database a risk-based rationale for not doing so.

b) PA. The baseline interval for PAs is once every 6 months for high-criticality elements, once a year for medium-criticality elements, and once every 3 years for low-criticality elements. After completing the initial PA for an element, the PI or CPM must schedule another assessment within the applicable baseline intervals.

2) Baseline Dates.

a) DA. Baseline dates are automatically generated 5 years after the quarter in which the previous DA was completed. The DA is complete when the PI or CPM reviews the collected data and documents the bottom-line assessment with the appropriate action.

b) PA. Depending on the element’s criticality, baseline dates are automatically generated 6 months, 1 year, or 3 years after the quarter in which the previous PA was completed. After the PI or CPM collects and reviews the PA data and documents the appropriate action of the bottom-line assessment, the PA is complete.

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3) Due Dates. The due date and the baseline date are the same unless the PI or CPM makes a manual adjustment to the due date based on ACAT results or other factors. The PI or CPM must provide an explanation for adjusting the due date. Changing due dates may extend or reduce the interval between assessments.

4) Priority. The CAP initially sorts and displays all of the applicable elements based upon their ACAT risk score value from highest to lowest. Each applicable element also receives a priority number starting at one (for the highest priority). The PI or CPM can manually adjust the priority of any element. The PI or CPM must provide an explanation for manually adjusting an element priority.

B. Initial Certification. The initial CAP for an applicant contains a planned DA and PA for each applicable element. The CPM uses the following guidance to develop the initial CAP.

1) Finalizing the CAP. When the CPM initially finalizes the CAP, all DAs and PAs will have a due date in that quarter. During the certification, the CPM manually adjusts the dates based on the applicant's schedule of events. The baseline assessment plan for the CMT should divide assessments equally among the four quarters of each year.

a) DA. After the applicant has been certified, the new CMT needs to establish a plan that balances the DA activities over a 5-year period. The PI should plan to complete DAs for about one-fifth of the applicable elements each year.

b) PA. PAs are balanced over a 3-year period. The PI should plan to complete PAs for high-criticality elements within 6 months, within 1 year for medium-criticality elements, and should plan to complete about one-third of the low-criticality elements each year.

2) Adjustments to CAP Priorities. The initial CAP displays the elements sorted by the risk score derived from the ACAT starting with the element that has the highest potential risk. The CPM adjusts the DA priorities and enters an explanation for the adjustment, based on the following factors:

a) DA.

1. Air Carrier Programs Requiring FAA Approval or Acceptance. The CPM assigns the highest priority to, and the CPT accomplishes elements associated with, air carrier programs that specifically require documentation in FAA-approved or FAA-accepted manuals.

2. DAs Completed by the Applicant. The applicant must complete a self-audit using the SAI. In addition to the DAs required by paragraph 10-120, the CPM determines which additional applicant self-audited elements the CPT completing the DA will verify. The CPT will review and accept all other elements.

b) PA Air Carrier Programs Requiring Demonstration. The CPM assigns the highest priority to the air carrier programs with elements that specifically require demonstration in tabletop exercises, simulated evacuations, and proving tests. The CPT accomplishes reviews of such demonstrations.

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C. Continued Operational Oversight. The CAP for an air carrier contains a planned DA and PA for each applicable element. The PI uses guidance in subparagraph 10-121D to adjust the CAP.

D. Adjustments to CAP Due Dates or Priorities.

1) Explanation of Reason for Adjustment. The PI can adjust the DA due date or priority for any element with an explanation of the reason for the adjustment.

2) Adjusting the CAP. The PI may adjust the CAP due to the following:

a) The results of a bottom-line assessment for that element;

b) The status of the element in relation to the 6-month, 1-year, or 3-year PA review cycle, or the 5-year DA cycle;

c) Any increase or decrease in the risk score over time. Refer to the Risk Indicator Report to review the percentage of increase above baseline and CAP priority at https://avssharepoint.faa.gov/afs/AWP/ATOS;

d) Assignment of DA completion dates based on the highest risk;

e) New elements added because of major changes to air carrier operations; and/or

f) Unassigned work in the previous planning cycle that may have a higher priority level for the current planning cycle.

NOTE: A fundamental principle of ATOS is that PAs and DAs with the highest risk-based priorities should always have resources assigned to them. This principle primarily applies to PAs and/or DAs that are due within the current planning quarter. It does not require adjusting due dates from the future quarters based solely on the ranking of an element.

10-122 OTHER FACTORS THAT AFFECT DUE DATES. If a DA or PA displays a ghost icon for an element in the draft and final versions of the CAP, refer to https://avssharepoint.faa.gov/afs/AWP/ATOS to access “ACAT Risk Indicators.” This SharePoint site contains “reports” for each carrier and will provide the percentage of increased risk above baseline for the element and may be a reason for priority adjustments. The PI or CPM should consider any other factor that may affect the plan due dates and priorities. (See flowchart process step 2.5.) Upon determining that such a factor exists, the PI or CPM may adjust either the priority or the due date and include an explanation. The PI or CPM uses his or her knowledge and experience in making this assessment. Examples include:

- The PI knows that a planned change to a program is coming in a future quarter; and
- National guidance directs the CMTs to perform a focused DA or PA.

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10-123 DETERMINE THE DATA COLLECTION REQUIREMENT FOR EACH PA. After considering all factors that affect performance, the PI or CPM determines the data collection requirements for each PA. (See Figure 10-15, Module 2: Planning.)

A. Element Performance Inspections (EPI). The EPI Data Collection Tool (DCT) is for PAs. The PI or CPM needs to determine how many EPI DCTs to complete to obtain the data needed in order to assess air carrier performance for each element. Typically, an inspector has only one EPI assigned for a specific PA. He or she may complete multiple activities as part of that single EPI. PIs or CPMs may assign EPIs to more than one inspector in a PA (e.g., PIs or CPMs may want to assign EPIs to different inspectors for each aircraft fleet, for certain geographic areas, or for different training programs).

B. Oversight Prioritization Tool (OPT). Use of the OPT is optional. Only one OPT is required for each air carrier when the PI chooses to use the OPT. It is advisable that the PI utilize the OPT or their normal risk-based prioritization methodology. When the PI utilizes the OPT for planning surveillance, it can assist in:

1) Prioritization of air carrier maintenance providers to determine specific data collection requirements;

2) Identifying areas of concern or criticality; and

3) Providing data that allows the PI to target resources toward maintenance providers with the highest risk.

C. Off-Hour Decision Aid. The PI is required to know when to initiate the use of the Off-Hour Surveillance Decision Aid and how to process the results. There does not need to be an hour-for-hour correlation between the amounts of work the air carrier does during FAA off hours and the off-hour surveillance. The emphasis needs to be on identifying potential issues related to the air carrier's management of its processes.

1) Off-Hour Decision Aid. The Off-Hour Decision Aid (see Volume 10, Chapter 5, Section 1) instructs the user to match the capabilities of the air carrier to manage its off-hour activities or programs with a series of word pictures that address several dimensions (see Volume 10, Chapter 1, Section 5, Figure 10-10, Acronyms, Abbreviations, Terms, and Definitions, for a definition of off hour). Each dimension results in a score that, when taken together, produces a scoring range that indicates the effectiveness of the operator's off-hour activities. To complete the decision aid properly, the CMT will need to apply his or her knowledge of the carrier along with their assessment as to the prevalence and magnitude of the issues. The decision aid is designed to assist in these assessments and subsequent action planning.

2) Useful Data. Examples of useful data may include the use of EPI 1.3.7 maintenance providers and/or EPI 1.3.4, Required Inspection Items (RII), and include in the PI instructions the requirement to identify the amount and type of activities going on during off hours at the repair station (or other air carrier maintenance providers). If the PI needs more specific information about the hazard or risk, he or she may use a Constructed Dynamic

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Observation Report (ConDOR). The PI may also contact the specific air carrier for information regarding their off-hour activities. This may include the types of activities occurring during off hours, location of off-hour activities, management and supervision of off-hour activities, and interface with air carrier maintenance providers and other contracted activities.

10-124 DOCUMENT DATA COLLECTION REQUIREMENTS USING THE DETAILED WORK INSTRUCTION. The PI or CPM documents the data collection requirements using detailed work instructions after considering all the factors that affect design or performance. For PAs, instructions help to ensure that timely, high-quality data collection focuses on the areas the PI or CPM determines. (See flowchart process step 2.7.)

A. Instructions Help Ensure Timely, High-Quality Data. The CAP provides PIs with a plan tailored to the current oversight requirements for a specific air carrier.

B. Instructions Prioritize Activities and Set Timelines for the Start and Completion of the Activities by Certain Dates. The data collection period should be before the assessment due date to allow time for the PI or CPM to review the data and make an assessment.

C. Resource Requirements. PIs and CPMs should provide specific instructions to assist the Front Line Manager (FLM) in making assignments, including any special expertise, training, or background the inspectors assigned to the activity should have.

D. DA. The PI or CPM determines if a team or individual inspector should complete the SAI.

E. PA. Instructions ensure that PIs or CPMs obtain the data they need to assess the element. Timely, high-quality data are focused in the areas that the PI or CPM determines. PIs should provide specific instructions to ensure that activities are performed at appropriate locations and times for comprehensive and timely response to the questions. PIs or CPMs can use instructions to supplement or clarify DCT questions.

F. Other Relevant Information That the Instructions May Include:

- Location of the air carrier system documentation.
- Focused area of assessment.
- Type of fleet if there are program differences.
- Distressed air carrier, labor unrest, or other risk indicator information.
- Information obtained from the ADI tool.
- Any supplementary information the principal needs to make the assessment.

G. Examples of Quality Work Instruction.

1) DA. This Safety Attribute Inspection (SAI) will start on or about [date]. Perform at (airline name) headquarters (HQ) and the certificate management office. Complete a comprehensive review of the Data Collection Tool (DCT) and the applicable (airline name) policy and procedures. The team coordinator (TC) will schedule and conduct a meeting to

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discuss coordination of activities. Determine the (airline name) point of contact (POC) before starting the assessment. Complete and save to the master record by April 30, 2005.

2) PA. This Element Performance Inspection (EPI) will start on or about [date]. Complete a comprehensive review of the Data Collection Tool (DCT) and review the previous Safety Attribute Inspection (SAI) to become familiar with the applicable (airline name) policy and procedures. Perform activities at a minimum of five locations including Chicago O'Hare International Airport (ORD) and Orlando International Airport (MCO). Complete and save to the master record by (date).

10-125 OTHER DATA COLLECTION REQUIREMENTS. It is possible that a DA or PA is not required, but that some additional data are necessary either to aid the decisionmaking process or to update the SAI question responses and comments. When appropriate, consider ConDORs along with other planned oversight. The ConDOR may be appropriate in the following instances:

A. Evaluation. To evaluate program, policy, or regulatory changes.

B. Unique Situations. To address focused or unique situations in response to local, regional, or national requirements.

C. Targeted Data Collection. To collect targeted data for specific areas of immediate concern.

D. As an Action Item. As an action item in the risk management process (RMP) action plan.

E. Document Small Changes. To document minor changes to the air carrier's system (e.g., changes to the individual identified by the certificate holder as having responsibility and/or authority over the process).

F. Substitute for the DA. If the air carrier presents a revision to a manual that only changes a reference, a DA may not be necessary. The PI or CPM can generate a ConDOR instead of planning for a DA if a DA has already occurred.

10-126 RETARGETED CAP. Throughout the year, the CMT collects, reviews, reports on, and analyzes performance data and environmental factors so that PIs can make timely and consistent adjustments to the CAP.

A. Continual Monitoring and Adjustment. CMTs must obtain and continually monitor data for air carriers experiencing growth, financial distress, personnel reductions, labor unrest, and other organizational changes. The office manager or PI should not wait for formal notification of a problem before acting on identifying potential hazards and their associated risks. Reports such as the quarterly published CASP, accessible on the SPAS homepage; and VDRP data and ATOS national rollup data reports available through the ATOS database in the "News and Documentation" section may assist with this determination.

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B. Use Financial Condition and Growth Decision Aids. If performance data or environmental factors indicate that the air carrier is experiencing significant changes in the operating environment that may affect its ability to balance resources, size, and organizational structure with operational requirements, then the CMT must use the Financial Condition Assessment Decision Aid and the Growth/Downsizing Assessment Decision Aid located in the inspector's handbook to determine if it is necessary to retarget DAs or initiate the ATOS RMP.

C. The Importance of Retargeting Oversight. Retargeting oversight is an integral part of the dynamic CAP. The PI determines any oversight retargeting requirement when oversight or external data identify problems. Retargeting does not automatically delete or remove any information contained in the current CAP. It is not negative, nor does it mean the original CAP has flaws. It is normal for a CMT to retarget oversight several times a year based on the analysis of data or changing circumstances.

1) Analysis of Collected Data. Retargeting oversight allows for continuous update of the plan based on the analysis of data the CMT members collect. This should not be a response to CMT internal considerations such as staffing or budget constraints.

2) Retargeting Oversight on a Calendar Basis. The PI can retarget CAP oversight as often as necessary, but should not retarget on a calendar basis to close out a planning cycle. Continuously retargeting oversight to the same elements within a CAP upon identifying performance deficiencies is ill advised. Deficiencies warrant conducting a DA for those elements.

3) Focusing Additional Resources. If oversight retargeting is appropriate to focus additional resources in an area of concern, the PI must determine which elements of the ACAT are related to the area of concern. The PI can retarget oversight for the entire air carrier or for selected systems, subsystems, and elements.

Figure 10-16. Risk Indicator Quick Reference Guide

Risk indicators are a first step to identifying hazards that should be addressed by the air carrier.		
Environmental Criticality (EC)—Aspects of the air carrier's surroundings that may lead to or trigger a systemic failure with the potential of creating an unsafe condition.		
EC-01	Age of Fleet	The age of an air carrier's fleet can impact its systems.
EC-02	Varied Fleet Mix/Configuration	A varied fleet mix and/or mixed fleet configuration can significantly alter an air carrier's safety profile and the potential for failure in its systems.
EC-03	Change in Aircraft Complexity	Changes to the complexity of an air carrier's fleet can significantly affect an air carrier's safety and the potential for failure in its systems.
EC-04	Outsource (Maintenance, Training, Ground Handling)	The use of independent vendors, suppliers, and contractors, depending on a number of factors, could heighten the risks associated with various air carrier operations. Effective management of these contract arrangements is a must.
EC-05	Seasonal Operations	Short-term operations may present their own unique risk(s) and may require attention and preparation by the air carrier.

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EC-06	Relocation/Closing of Facilities	Relocating or closing a facility may adversely affect operational and system stability at an air carrier.
EC-07	Lease Arrangements	Aspects of lease arrangements may be sources of risk at air carriers and must be effectively managed.
EC-08	Off-hours Activity	Air carrier management of off-hour (i.e., as outside normal FAA hours, including weekends) activity can be prone to risk.
Performance History (PH)—Results of the air carrier's operations over time.		
PH-01	Enforcement Actions	Enforcement actions can help identify the air carrier's safety profile and any area of risk in its systems.
PH-02	Accidents/Incidents/ Occurrences	Data regarding accidents, incidents, and occurrences may provide insights into areas of risk at an air carrier.
PH-03	Department of Defense Audits	Department of Defense (DOD) audit findings help to identify hazards and their associated risks. Audit data may provide insights into systemic problems in the design and performance of an air carrier's systems.
PH-04	Voluntary Disclosures	The type and content of an air carrier's self disclosures, and the effectiveness of the air carrier's corrective actions, can assist in risk assessment.
PH-05	Safety Hotline/Complaints	Excessive or repetitive safety hotline and other complaints against an air carrier may assist in identifying and isolating areas of risk. Complaints can aid the air carrier in managing and controlling corrective and followup actions.
PH-06	Voluntary Programs Data	Air carrier voluntary program data may be useful for hazard or risk identification. Such data can aid the air carrier in managing corrective and followup actions.
PH-07	Surveillance Indicators	Surveillance data from the Safety Performance Analysis System (SPAS), Program Tracking and Reporting Subsystem (PTRS), applicable Information for Operators (InFO) and Safety Alerts for Operators (SAFO), and the Air Transportation Oversight System (ATOS) help to identify trends in air carrier performance and can assist with identifying risks in an air carrier's system design.

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Figure 10-16. Risk Indicator Quick Reference Guide (Continued)

Operational Stability (OS)—Organizational and environmental factors the air carrier cannot directly control, but can manage effectively to improve system stability and safety.		
OS-01	Key Management SPAS Indicators	Changes in key management personnel can significantly impact an air carrier's system and OS.
OS-02	Financial Conditions	Air carriers that experience adverse financial conditions may have higher risk.
OS-03	Change in Air Carrier Management	Changes in management personnel other than key management can significantly impact an air carrier's system and OS.
OS-04	Turnover in Personnel	A high turnover of operations or maintenance personnel can dramatically increase the potential for risk in an air carrier's systems.
OS-05	Reduction in Workforce	A reduction in the air carrier's workforce can dramatically increase the potential for failure in an air carrier's systems.
OS-06	Rapid Growth/Downsizing	Times of significant change such as rapid expansion or downsizing can impact air carrier operations due to the possible misalignment of resources and operational requirements.
OS-07	Merger or Takeover	Air carriers must effectively manage mergers or takeovers to ensure continued compliance and safe operating practices.
OS-08	Labor–Management Relations	A poor or deteriorating labor–management relationship can create risk.
Air Carrier Dynamics (CD)—Organizational and environmental factors that the air carrier can directly control to improve system stability and safety.		
CD-01	New/Major Changes to Program	Safety issues may develop from new or changed programs and may increase the potential for noncompliance with existing processes and controls.
CD-02	Continuing Analysis and Surveillance System (AW Only)	Air carriers with a poorly functioning Continuing Analysis and Surveillance System (CASS) can overlook and improperly manage increased levels of risk.
CD-03	Safety Management	Air carriers who do not have a Safety Management System (SMS) may not understand or adequately control hazards to operational safety.
CD-04	Relationship with the FAA	The air carrier's relationship with its assigned FAA personnel may provide insights into the air carrier's compliance posture and safety culture.
CD-05	Human Factors	Risk may exist due to human lapses in the air carrier's design and/or performance.

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Figure 10-17. EC-01 Age of Fleet

Condition: The age of an air carrier's fleet can impact its systems.

Background: Currently, the average jet in the U.S. commercial fleet is 13 years old. From the FAA's perspective, aging aircraft are defined as aircraft of any make or model that are 15 years or older. Many aircraft of the current U.S. commercial fleet are considered aging aircraft. The age of the fleet must be considered for developing a surveillance plan.

Risk Score	Inspector Considerations
1–2	The air carrier does not have an aging fleet. The air carrier's procedures, controls, interfaces ,and process measurements appear to adequately address the requirements of an aging fleet.
3–5	Concern exists regarding the air carrier's ability to manage an aging fleet due to considerations such as: Inadequate management of operational risk associated with aging aircraft. Inadequate aging aircraft identification process. Ineffective internal and/or external communications flow regarding the maintenance and operational requirements of an aging fleet. Inadequate corrective action plan (CAP). Air carrier maintenance program and related infrastructure inadequate to meet the enhanced requirements associated with aging aircraft. The air carrier has aircraft just approaching the timeline for aging aircraft and dealing with aging aircraft is a new or unknown component of its profile.
6–7	Concern exists that the air carrier does not have a process to identify and evaluate the aging aircraft in its fleet. The air carrier has not demonstrated appropriate or effective management of the situation. Concern exists that the air carrier's processes to manage an aging aircraft fleet appear to be inadequate at most levels.

Guidance References (current editions): Not applicable.

Data Sources: Aircraft Evaluation Group (AEG), operations specifications (OpSpecs), air carrier and industry fleet lists, Aviation Safety Information Analysis and Sharing (ASIAS), and Safety Performance Analysis System (SPAS).

Impact on ATOS System, Subsystem, and Elements: ATOS systems contain elements that may pertain to aging aircraft, particularly in the airworthiness systems, subsystems, and elements. Focus on the area of concern and attempt to relate it to the affected elements in these systems. Remember to consider interfacing and supporting elements in the maintenance system as applicable.

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Figure 10-18. EC-02 Varied Fleet Mix/Configuration

Condition: A varied fleet mix and/or mixed fleet configuration can significantly alter an air carrier's safety profile and the potential for failure in its systems.

Background: A varied and/or mixed fleet exists when an air carrier fleet includes: a variety of different aircraft types; a mix of models and/or series of the same type within the same fleet; multiple types within the same fleet; and a number of different configurations of the same make and model within the same fleet.

Many established air carriers have long operated a varied fleet mix and/or mixed fleet configurations. The implications for operating this type of fleet may be more significant for new entrant air carriers, where resources and infrastructure may be a major consideration.

Risk Score	Inspector Considerations
1–2	The air carrier does not have a varied fleet mix and/or mixed fleet configuration. The impact of varied fleet mix and/or mixed fleet configuration appears to be effectively managed by the air carrier's procedures, controls, and process measures. Any adverse impact appears negligible.
3–5	Concern exists regarding the impact of the varied fleet mix and/or mixed fleet configuration on the air carrier due to considerations such as: Inadequate management structure to handle the impact of a varied fleet mix and/or mixed fleet configuration; Potential for adverse impact on the air carrier's maintenance program; Potential for adverse impact on the air carrier's operations program; Potential for adverse impact on the air carrier's training program; The air carrier lacks the necessary system controls for the varied fleet mix and/or mixed fleet configuration; and The air carrier has little or poor performance history with varied fleet mix and/or mixed fleet configuration.
6–7	Concern exists that the air carrier does not have the overall infrastructure in place to support a varied fleet mix and/or mixed fleet configuration. The air carrier has not demonstrated appropriate or effective management.

Guidance References (current editions): FAA Order 8900.1, Volume 10, Chapter 6, Section 3, Aircraft Configuration Control Document.

Data Sources: Operations specifications (OpSpecs), company manuals, air carrier and industry fleet listing, Enhanced Vital Information Database (eVID) data, past surveillance findings, internal audit findings, human factor indications (identified weaknesses of the controls attribute during surveillance of an element), Mechanical Interruption Summary (MIS), and air carrier crewmember irregularity reports.

Impact on ATOS System, Subsystem, and Elements: Operating this type of fleet can cut across all aspects of an air carrier's operations: training, maintenance, human factors, ground-handling operations, etc. When considering the impact on the ATOS model, consider the operational area of the concern and tie it to the ATOS system(s), subsystem(s), and element(s) most closely

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related with the concern. Also consider related training manuals and management areas, and the risk impact of the varied/mixed fleet on these areas.

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Figure 10-19. EC-03 Change in Aircraft Complexity

Condition: Changes to the complexity of an air carrier's fleet can significantly affect an air carrier's safety and the potential for failure in its systems.

Background: Complex aircraft generally incorporate more sophisticated technology. Innovative technology can increase or decrease the potential for noncompliance with existing processes and controls. A change in aircraft means that the carrier may need processes and procedures to support differences in both manual and automated complexities and technology. New aircraft technology can impact the air carrier infrastructure because of additional requirements for training, operations, and maintenance.

Risk Score	Inspector Considerations
1–2	The air carrier is not currently experiencing a change in aircraft complexities or technologies. The impact of aircraft complexity and technology appears to be effectively managed by the air carrier's procedures, controls, and process measures. Any adverse impact appears negligible to nonexistent.
3–5	Concern exists regarding the impact of change in aircraft complexity due to inadequate infrastructure considerations such as: Controls and process measures may be inadequate to manage the changes in operations and maintenance. Air carrier personnel and others have little experience with the new technologies and/or the operational environment. Dramatic changes in operating environment due to changed aircraft complexity. Ineffective or no air carrier safety audits to assess the effectiveness of the air carrier's training programs and operation within the air carrier environment. Equipment/logistical support for new technology may be lacking. Air carrier has little or poor performance history with incorporating complex aircraft.
6–7	Concern exists about adverse impact on system design or performance due to the change in aircraft complexity. The air carrier has not demonstrated appropriate or effective management of the situation.

Guidance References (current editions): FAA Order 8900.1, Volume 6, Chapter 2, Section 18, Evaluation of Air Carrier's Management of Significant Changes.

Data Sources: Aircraft Evaluation Group (AEG), aircraft manufacturer Type Certificate Data Sheets (TCDS), Flight Standardization Board (FSB) reports, Continuing and Analysis Surveillance (CAS) reports, Mechanical Interruption Summary Reports (MISR)/Service Difficulty Reports (SDR), reliability reports, training records, line checks, and Air Carrier Delay Summaries.

Impact on ATOS System, Subsystem, and Elements: Aircraft configuration control, flight operations, and personnel training and qualifications. ATOS systems all contain elements that may pertain to changes in aircraft complexity. Focus on the area of concern and attempt to relate it to the affected elements in these systems. Remember to consider interfacing and supporting elements in the Technical Administration and Manual systems, as applicable.

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Figure 10-20. EC-04 Outsource (Maintenance, Training, Ground Handling)

Condition: The use of independent vendors, suppliers, and contractors, depending on a number of factors, could heighten the risks associated with various air carrier operations. Effective management of these contract arrangements is a must.

Background: The aviation industry increasingly has made arrangements for the accomplishment of traditional air carrier functions to independent contractors. These arrangements have developed to the point where multiple levels of contractors could be involved in providing the service. Contract arrangements might include maintenance, ground handling, and training.

Risk Score	Inspector Considerations
1–2	The air carrier does not outsource. The air carrier's oversight staffing and audit functions appear to be adequate to include the outsourced functions. The contractor(s) effectively meet the training requirements of the air carrier and are qualified for the contract arrangement(s). The air carrier effectively manages impacts of outsourcing.
3–5	Concern exists regarding the impact of outsourcing due to considerations such as: The contract personnel are utilized by numerous air carriers, increasing the possibility of non-adherence to procedures; The contract personnel training records are inaccurate; Adverse Department of Defense (DOD) findings against the contractor; Contractor qualifications and abilities (maintenance, training, and/or ground handling) are in question; The air carrier frequently changes contractors based on economics; and/or The use of outsourcing for all or particular functions is relatively new at the carrier; therefore, lack of historical data is a major consideration.
6–7	Concern exists about the impact of outsourcing because the air carrier does not have an effective safety audit function to monitor the performance of the contractors. Concern exists because the contractor's performance history indicates multiple, repeated safety violations.

Guidance References (current editions): FAA Order 8900.1, Volume 3, Chapter 42, Evaluate Part 121/135 (10 or More) Contract Maintenance Program, Contract Agreements, and Contracted Work; Volume 10, Air Transportation Oversight System; Safety Attribute Inspection (SAI) 1.3.11; Element Performance Inspections (EPI) 1.3.11, SAI 1.3.7 AW; EPI 1.3.7 AW; SAI 4.2.9 OP; and EPI 4.2.9 OP.

Data Sources: Contractor enforcement history, training records, initial operating experience (IOE) records, Safety Performance Analysis System (SPAS) repair station reports, DOD audit findings, and air carrier past performance including element 1.3.7 AW and/or 4.2.9 OP.

Impact on ATOS System, Subsystem, and Elements: Evaluate if the risk identified is related directly to the dedicated ATOS elements 1.3.7 AW and/or 4.2.9 OP. Compare the contract arrangements with the structure of the ATOS air carrier system, subsystem, and element model. Choose the element(s) whose performance measures and design most closely match the contracted work functions where risk has been identified. Evaluate impact across systems for elements where associated risk may also be present.

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Figure 10-21. EC-05 Seasonal Operations

Condition: Short-term operations may present their own unique risk(s) and may require attention and preparation by the air carrier.

Background: Air carriers perform seasonal operations during a particular season or time of year to satisfy a short-term need. Seasonal operations, while limited in nature, require as much or more preparation and attention to the quality and safety of the services provided as regular operations (e.g., air carriers who normally operate in a warm environment may engage in seasonal operations that occur during the winter months when flying to and from ski resort areas. They must be prepared to manage aircraft deicing, training, and all of the associated requirements. If the air carrier does not normally fly this route, deicing may not be part of its regular operations). Understanding the type and scope of the seasonal operation, as well as the impact on the air carrier's systems, is critical in rating this indicator.

Risk Score	Inspector Considerations
1-2	The air carrier does not conduct seasonal operations. Procedures, controls, and process measures appear to effectively manage the impact of seasonal operations on the infrastructure of the air carrier systems. Any adverse impact appears to be negligible to nonexistent.
3–5	Concern exists regarding the air carrier's ability to conduct seasonal operations due to considerations such as: Air carrier has no past experience with seasonal operations. The air carrier's procedures, controls, and process measures do not effectively manage the impact of seasonal operations on its infrastructure. Air carrier has encountered problems with seasonal operations in the past. Air carrier does not conduct safety audits of its seasonal operations. Incomplete integration of air carrier's core business functions to the seasonal operation.
6–7	Concern exists that the air carrier is unable to manage the risks associated with the temporary change in its operational environment due to the seasonal operation, and controls and procedures do not support the operation or do not exist at all. The air carrier has not demonstrated appropriate or effective management of the situation.

Guidance References (current editions): FAA Order 8900.1, Volume 3, Chapter 18, Section 8, Amendment, Surrender, and Suspension of OpSpecs, subparagraph 3-1031A2); Volume 6, Chapter 2, Section 38, Evaluate a Part 121/135.411(a)(2) Operator Aircraft Storage Program; and Advisory Circular (AC) 120-27, Aircraft Weight and Balance Control.

Data Sources: Operation specifications (OpSpecs); Safety Performance Analysis System (SPAS) data; ATOS Data Repository; and discussion with air carrier personnel.

Impact on ATOS System, Subsystem, and Elements: Based upon the scope and type of seasonal operation(s) conducted and the inspector assessment of possible location(s) for risk, identify corresponding ATOS system(s), subsystem(s), and element(s) that relate to that risk. Consider other system(s) that support the seasonal operation and might be burdened. Focus also on the elements dealing with training and management support for these areas.

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Figure 10 22. EC-06 Relocation/Closing of Facilities

Condition: Relocating or closing a facility may adversely affect operational and system stability at an air carrier.

Background: Air carrier change to facilities could include adding a new facility, closing a facility, and/or moving an existing facility to another site. A misalignment of resources to requirements surrounding the change should be of concern and may indicate safety risk.

Risk Score	Inspector Considerations
1–2	The air carrier has not experienced any changes/relocation of facilities. Air carrier changes/relocations of facilities do not appear to disrupt or adversely impact the quality and safety of ongoing operations. The air carrier's system, process measures, and controls are both effective and undertaken correctly. The air carrier has demonstrated appropriate and effective management of events.
3–5	Air carrier changes/relocations of facilities may not be effectively managed. Concern exists due to considerations such as: Air carrier already has poor past performance history with regard to the relocation and closing of facilities. Air carrier has not effectively managed changes to its facilities Rate and pace of change is inappropriate. Change is not steady, not implemented over time, and not accompanied by appropriate training, documentation, and manual changes. Air carrier may not have adequate resources and training to support the change. Background and experience of personnel at new facility in question.
6–7	Concern exists due to adverse impact of air carrier changes/relocations of facilities which may disrupt the quality and safety of ongoing operations. The air carrier has not demonstrated appropriate or effective management of the event(s).

Guidance References (current editions): FAA Order 8900.1, Volume 2, Chapter 2, Section 5, Evaluate Applicant's Refueling Procedures and Facilities (Parts 121, 125, and 135); Volume 3, Chapter 27, Section 1, General; Volume 6, Chapter 2, Section 24, Station Facilities Inspections for Part 121 and 135 Air Carriers (PTRS Code 1635); Volume 6, Chapter 2, Section 26, Inspect Program Manager/Operator's Maintenance Facility for Parts 91 Subpart K, 121, and 135; and ATOS elements 1.3.3, 5.1.1, 1.3.16, and 1.3.18.

Data Sources: ATOS Data Repository and discussion with air carrier personnel.

Impact on ATOS System, Subsystem, and Elements: If root cause(s) and/or failure of event(s) is generally known and validated, consider the system(s), subsystem(s), and element(s) in the ATOS structure that relate to the failure or root cause. Consider also the ATOS Training and Technical Administration systems. If the air carrier has not effectively and appropriately managed the events, consider also the ATOS Manuals and Technical Administration systems.

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Figure 10-23. EC-07 Lease Arrangements

Condition: Aspects of lease arrangements may be sources of risk at air carriers and must be effectively managed.

Background: A lease is any agreement by a person (the lessor) to provide an aircraft to another person (the lessee) who will use the aircraft for compensation or hire purposes. These arrangements are increasingly used to meet market demands and seasonal operations. The variety of leasing arrangements an air carrier enters into can have a significant impact on its maintenance, training, operations programs, and its overall safety (wet lease, dry lease, interchange agreements). Interchange agreements can have a major impact on normal air carrier operations; therefore, special attention during surveillance may be warranted when an air carrier is a party to this type of arrangement.

Risk Score	Inspector Considerations
1–2	The air carrier is not presently involved in any lease arrangements. The impact of any lease arrangements appears to be effectively managed by the air carrier's procedures, controls and process measures. The air carrier has demonstrated appropriate and effective management of any events.
3–5	Concern exists about the impact of the lease arrangements due to considerations such as: Perceived difficulty of exercise of operational control. Air carrier audit functions fail to account for special circumstances of lease agreement. Changes to flight and ground crew training to support the lease arrangement are broad. Lack of sound controls and lack of attention to interfaces in new procedures required by lease agreement.
6–7	Concern exists regarding high adverse impact of the lease arrangement on air carrier systems, subsystems and elements. In the event of a wet lease arrangement, air carrier loss of operational control may be a concern. The air carrier has not demonstrated appropriate or effective management of the situation.

Guidance References (current editions): FAA Order 8900.1, Volume 3, Chapter 13, Section 1, Evaluate Aircraft Lease/Interchange Agreement; Volume 3, Chapter 46, Evaluate 14 CFR Part 121/135 10 or More Leased Maintenance Program Authorization: U.S. Registered Aircraft; and Volume 12, Chapter 2, Foreign Air Carriers Operating to the U.S. and Foreign Operators of U.S.-Registered Aircraft Engaged in Common Carriage Outside the U.S.

Data Sources: Lease agreement contract, air carrier promotional materials, and operations specifications (OpSpecs).

Impact on ATOS System, Subsystem, and Elements: Lease agreements can affect most operational areas. Based on the nature of the lease arrangement and the concerns assessed, associate the corresponding ATOS system(s), subsystem(s), and element(s).

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Figure 10-24. EC-08 Off-Hours Activity

Condition: Air carrier management of off-hour (i.e., outside normal FAA hours, including weekends) activity can be prone to risk.

Background: Oversight of Title 14 of the Code of Federal Regulations (14 CFR) part 121 air carriers requires insight into the entire range of activities performed by the air carrier. Because much of that activity is conducted during times that are not normal duty hours for FAA inspectors, the Certificate Management Team (CMT)/certificate-holding district office (CHDO) must make a conscious effort to ensure that the air carrier has the means and methods to ensure that procedures are being followed and that the air carrier continues to be in regulatory compliance at all times. Potential factors that could contribute to problems during off-hour activities include the possibility of diminished FAA presence; less-than-effective air carrier managerial oversight; unavailability of expert advice or other supporting resources (help desks, vendor support, etc.); incomplete exchange of information during shift change; personnel fatigue; and a range of other potential problems.

The Off-Hour Surveillance Decision Aid is designed to assist in identifying risk. Consider that while some components of the decision aid scoring are primarily geared toward airworthiness activities, an assessment can also be made for flight/ground operations in conjunction with the decision aid. An example of off-hour air carrier activity in the air carrier flight/ground operations arena might be training that is conducted during off hours (midnight shift) or flight operations primarily conducted outside of normal FAA duty hours (e.g., overnight cargo operations).

Risk Score	Inspector Considerations
1–2	Off-hours activity appears to be effectively managed by the air carrier's procedures, controls, and process measures. Any adverse impact appears to be negligible to nonexistent; and/or Off-Hour Surveillance Decision Aid score of 57–80.
3–5	Concern exists about air carrier management of components of its off-hour activity for considerations such as: • Adequacy of any training for off-hours personnel. • Effectiveness of change-over procedures. • Amount of off-hours activity performed; and/or Off-Hour Surveillance Decision Aid score of 41–56.
6–7	Concern exists regarding the air carrier's ability to manage off-hours activity on a system level; and/or Off-Hour Surveillance Decision Aid score of 8–40.

Guidance References (current editions): FAA Order 8900.1, Volume 10, Chapter 5, Section 1, Off-Hour Surveillance Air Carrier Oversight Process.

Data Sources: Off-hour Surveillance Decision Aid, Comprehensive Assessment Plan (CAP) notes, interviews with air carrier management and personnel, company maintenance records,

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Figure 10-24. EC-08 Off-Hours Activity (Continued)

flight schedules, employee duty and rest records, and Civil Aerospace Medical Institute (CAMI) Human Factors reports.

Impact on ATOS System, Subsystem, and Elements: Based upon the notes that indicate the CMT's collection of type and amount of off-hour activity accomplished at the air carrier, associate the appropriate ATOS system, subsystem, and element structure with the risk concern(s) identified. If the Off-Hour Surveillance Decision Aid was used, focus on the components of the aggregate scoring with the most adverse scores, and relate them to the ATOS system, subsystem, and element model.

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Figure 10-25. PH-01 Enforcement Actions

Condition: Enforcement actions can help identify the air carrier's safety profile and any area of risk in its systems.

Background: Enforcement actions are the reported results of any administrative and/or legal enforcement that the FAA has taken against an air carrier and/or certificated personnel in response to regulatory noncompliance. A trend analysis is an important factor in assessing this risk indicator, as it can identify deteriorating systems and programs.

Risk Score	Inspector Considerations
1–2	The air carrier has no recent enforcement activity. The air carrier's enforcement history does not appear to indicate failure in system controls and/or an adverse change in the safety profile. Any enforcements have been low-criticality and not of a repetitive nature.
3–5	The air carrier's enforcement history may indicate stresses in system controls and/or an adverse change in its safety profile. Concern exists due to considerations such as: • Enforcements in critical areas. • Enforcements are repetitive in nature. • Enforcements appear to identify a negative trend. • Air carrier failure to initiate adequate corrective action and followup processes.
6–7	The air carrier's enforcement history appears to indicate failure in system controls and/or a rapid and large-scale deterioration in the safety profile. The air carrier has not demonstrated appropriate or effective management of the event(s). Concern exists due to enforcements of high criticality, or multiple enforcements in repeated areas, or across the air carrier's systems.

Guidance References (current editions): FAA Order 2150.3, FAA Compliance and Enforcement Program; FAA Order 8900.1, Volume 11, Chapter 3, Section 1, Program Overview; Volume 7, Chapter 7, Conduct Violation Investigation; Volume 14, Chapter 2, Section 1, Compliance and Enforcement Special Considerations; and Volume 12, Chapter 2, Foreign Air Carriers Operating to the U.S. and Foreign Operators of U.S.-Registered Aircraft Engaged in Common Carriage Outside the U.S.

Data Sources: Safety Performance Analysis System (SPAS), Aviation Safety Information Analysis and Sharing (ASIAS), and Enforcement Information System (EIS).

Impact on ATOS System, Subsystem, and Elements: Consider the area(s) of the air carrier's operation where the regulatory noncompliance(s) caused the enforcement action(s). Review the ATOS system, subsystem, and element structure for any related risk(s). Consider related training and management issues that may also contribute to root cause, as well as failures in interfacing systems. If it is determined that air carrier followup and corrective action for enforcements have been ineffective, evaluate the Key Personnel and/or Manual Management subsystem(s).

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Figure 10-26. PH-02 Accidents/Incidents/Occurrences

Condition: Data regarding accidents, incidents, and occurrences may provide insights into areas of risk at an air carrier.

Background: To be most effective, these data should be analyzed in conjunction with the air carrier's response, corrective action planning, and ongoing followup activities. Collectively, this information may provide a point-in-time measurement of the air carrier's performance. Repeated events could be an indication of management and an air carrier systems' inability to resolve issues and implement corrective actions appropriately.

Risk Score	Inspector Considerations
1–2	The air carrier has not experienced any accidents, incidents, or occurrences. Any occurrences/incidents were minor. The air carrier has demonstrated appropriate and effective management of any events.
3–5	Concern exists regarding the air carrier's accident/incident occurrence history due to considerations such as: • Repeated events in interfacing areas. • Increasing number of events. • Criticality of event(s). • Root cause(s) of the event(s) or inadequate analysis of root cause. • Inadequate air carrier controls. • Inadequate air carrier followup to event(s).
6–7	Concern exists because the air carrier has experienced accident(s) or incident(s) that appear to indicate a negative trend with an escalation in severity. The air carrier has not demonstrated appropriate or effective management of the event(s).

Guidance References (current editions): FAA Order 8900.1, Volume 7, Chapter 1, Section 1, Accident Investigations; Volume 7, Chapter 1, Section 2, Incident Investigations and Occurrences; and Volume 8, Chapter 5, Section 6, Process Service Difficulty Report.

Data Sources: Safety Performance Analysis System (SPAS) data packages, FAA Accident Investigation Records, Investigation of Pilot Deviation Reports, Accident/Incident Corrective Action Records, Aircraft Accident/Incident Preliminary Notices, National Transportation Safety Board (NTSB) findings/reports, Mechanical Interruption Summary Reports (MISR), Service Difficulty Reports (SDR), and Data Collection Tool (DCT) 1.2.4.

Impact on ATOS System, Subsystem, and Elements: If root cause(s) and/or failure of event(s) is generally known and validated, consider the system(s), subsystem(s), and element(s) in the ATOS structure that relate to the failure or root cause. Consider also the ATOS Training and Technical Administration systems. If the air carrier has not effectively and appropriately managed the events, consider also the ATOS Manuals and Technical Administration Systems.

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Figure 10-27. PH-03 Department of Defense Audits

Condition: Department of Defense (DOD) audit findings help to identify hazards and their associated risks. The audit data may provide insights into systemic problems in the design and performance of an air carrier's systems.

Background: The DOD Air Carrier Survey and Analysis Team monitors certificate holders that do business with the DOD. The DOD regulations, directives, and Commercial Air Carrier Quality and Safety requirements form the basis for the DOD surveillance auditing process. The audit is conducted every 2 years and is documented on a structured Air Carrier Operations Survey Checklist. While the structure of the DOD surveillance auditing process varies from the FAA process, the results provide a unique view of the air carrier, as the DOD is often an airline's largest customer and the audits are a requirement of the contract between the DOD and the certificate holder.

Risk Score	Inspector Considerations
1–2	The air carrier is not a DOD air carrier. There are no significant adverse DOD findings against the air carrier.
3–5	The DOD has placed the air carrier on Close Watch program for safety issues or has indicated other concerns for safety issues and/or the DOD has recently recertified the air carrier after temporary non-use status; or Timing interval since the last complete DOD survey is longer than the standard 2 years and/or scope of that survey not complete.
6–7	Air carrier is currently removed from the DOD list of qualified air carriers. Air carrier is currently on temporary non-use status for safety issues.

Guidance References (current editions): FAA Order 8900.1, Volume 3, Chapter 2, Section 1, Exemptions, Deviations, Waivers, and Authorizations, paragraph 3-39.

Data Sources: Safety Performance Analysis System (SPAS), DOD inspection reports, DOD liaison, air carrier personnel, and air carrier's operations specifications (OpSpecs).

Impact on ATOS System, Subsystem, and Elements: Inspector should evaluate and focus on those ATOS elements that correspond or are related to the areas of adverse DOD findings. Determine which aspects of the systems are affected by the adverse DOD findings. Further determine what these impacts might mean in terms of additional surveillance requirements.

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Figure 10-28. PH-04 Voluntary Disclosures

Condition: The Voluntary Disclosure Reporting Program (VDRP) provides incentives for/encourages regulated entities themselves (e.g., airlines, repair stations) to voluntarily report instances of regulatory noncompliance. The FAA's policy of forgoing civil penalty actions when one of these entities detects violations, promptly discloses the violations to the FAA, and takes prompt corrective action to ensure that the same or similar violations do not recur is designed to encourage compliance with the FAA's regulations, foster safe operating practices, and promote the development of Internal Evaluation Programs (IEP).

Background: The design of the VDRP policy to encourage certificate holders to voluntarily disclose their own violations, while preventing the erosion of compliance that might result from abuses of such self-reporting. The protections against legal enforcement action under the VDRP will only apply to violations determined by the FAA to be inadvertent. It does not apply to violations that indicate a lack, or reasonable question, of qualification of a certificate holder.

Voluntary disclosures must be submitted in a timely fashion, as specified in current VDRP guidance, and the certificate holder must take immediate action, satisfactory to the FAA, to cease the conduct that resulted in the violation. Companies submitting a voluntary disclosure under the VDRP are obligated to develop and schedule implementation satisfactory to the FAA. The comprehensive fix includes a followup self-audit to ensure that the action taken corrects the noncompliance. Repeat violations of the same regulation may be accepted under the VDRP.

Based upon the facts and circumstances surrounding the repeated violation, the FAA will determine on a case-by-case basis whether a repeated violation will be covered and that they otherwise meet the acceptance criteria of the program.

Except for certificate holder violations initially identified in an Aviation Safety Action Program (ASAP) report, or discovered in the course of a joint audit, the VDRP does not accept violations that have already been detected by the FAA.

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Figure 10-28. PH-04 Voluntary Disclosures (Continued)

Risk Score	Inspector Considerations
1–2	Voluntary disclosures appear to have been effectively handled as an integral air carrier system component and the corrective action has augmented the air carrier's safety profile. Root causes have been accurately identified and corrective actions are effective.
3–5	Concern exists due to considerations such as: • Inability to effectively define root cause, ineffective voluntary disclosure process at the air carrier. • Poorly documented procedures at the air carrier for self-disclosure process. • Management does not encourage use of self-disclosure process. • Voluntary disclosure process has not reduced problems or violations. • Corrective actions were inadequate or the implementation of corrective actions was not effective as evidenced by repeated violations. • Company employees unaware of self-disclosure process. • The air carrier does not actively participate in the voluntary disclosure program.
6–7	Concern exists because: There are multiple repeated voluntary disclosures in high-criticality areas having the same root cause and continued failure on the part of the carrier in implementing corrective and followup action of the same root cause. It appears that the air carrier set performance goals that reflect a desire to drive down the number of voluntary reports submitted.

Guidance References (current editions): Advisory Circular (AC) 00-58, Voluntary Disclosure Reporting Program; FAA Order 8900.1, Volume 11, Chapter 1, Voluntary Disclosure Reporting Program; http://av-info.faa.gov/vdrp; Report of the Independent Review Team, "Managing Risks in Civil Aviation: A Review of the FAA's Approach to Safety"; Annex 6 to the Convention on International Civil Aviation, Operation of Aircraft; International Civil Aviation Organization (ICAO) Document 9859, ICAO Safety Management Manual; ICAO Document 9734 Safety Oversight Manual; FAA Order 8000.369, Safety Management System Guidance; FAA Order VS 8000.367, Aviation Safety (AVS) Safety Management System Requirements; and AC 120-92, Safety Management Systems for Aviation Service Providers.

Data Sources: Service provider outputs from the Safety Management System (SMS), FAA records, air carrier self-disclosure packages, and Safety Performance Analysis System (SPAS).

Impact on ATOS System, Subsystem, and Elements: Inspectors must abide by the rules describing VDRP to ensure compliance within applicable regulations. Focus on the subject area and nature of the self-disclosure(s). Drill down to the root cause(s) if possible, and relate it to the system, subsystem, and element structure of the ATOS model. Ensure that the air carrier has completed a Root Cause Analysis (RCA) of the event(s) that lead to voluntary disclosure. Check that the air carrier implements a corrective action and that they follow up to determine if the corrective action was effective. Evaluate interfacing and supporting systems, such as training or personnel. If the risk concern includes the lack of effectiveness of the air carrier's corrective action, consider focusing also on the Manual Management and Key Personnel subsystems.

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Figure 10-28. PH-04 Voluntary Disclosures (Continued)

Conduct regular audits of the disclosures and acceptances to validate adherence to program policy. Depending on the underlying root causes, repeat disclosures could indicate a failure to implement effective or comprehensive fixes.

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Figure 10-29. PH-05 Safety Hotline/Complaints

Condition: Excessive or repetitive safety hotline and other complaints against an air carrier may assist in identifying and isolating areas of risk. Complaints can aid the air carrier in managing and controlling corrective and followup actions.

Background: This indicator considers recorded charges of dissatisfaction brought by consumers, employees, vendors, other air carriers, and members of Congress against the air carrier. Complaints received by these entities, which are related to the air carrier or aircraft operations, maintenance, quality, stability, compliance, or safety, may affect surveillance planning. Any type of complaint information, and actions taken as result of a complaint, provides an external view of how consumers and industry peers perceive the air carrier. This perspective may be of value during risk assessment and surveillance planning.

Risk Score	Inspector Considerations
1–2	There have been no safety hotline/complaints against the air carrier. Any complaints have been relatively minor and do not appear to point to system weakness or human factors issues.
3–5	Concern exists due to considerations such as: • Multiple complaint data points in same area(s). • Single complaint in highly critical area of the air carrier's operation. • Air carrier complaint resolution history has indicated that the air carrier does not have a strong corrective action plan (CAP) and process for assessing, categorizing and handling complaints.
6–7	Concern exists because there are multiple, repeated complaints in the same area revealing risk in a system, subsystem, or element that appear to indicate a negative trend with escalation in severity. The air carrier has not demonstrated appropriate or effective management of the event(s).

Guidance References (current editions): FAA Order 8900.1, Volume 7, Chapter 7, Conduct Violation Investigation; Volume 11, Chapter 3, Section 1, Program Overview; Volume 11, Chapter 3, Section 2, Responsibilities and Procedures; and Volume 11, Chapter 3, Section 3, Complaint Processing.

Data Sources: FAA safety hotline data, Congressional inquiries and/or other complaints lodged against the carrier, Department of Transportation (DOT) complaint statistics, comparable surveillance data, Safety Performance Analysis System (SPAS), Program Tracking and Reporting Subsystem (PTRS) reporting source codes for hotline and whistleblower programs.

Impact on ATOS system, Subsystem, and Elements: Focus on the subject area and nature of the complaint(s). Drill down to the root cause(s), if possible, and relate it to the system, subsystem, and element structure of the ATOS model. Also evaluate interfacing and supporting systems, such as training or personnel. If the risk concern includes the lack of effectiveness of the air carrier's corrective action, consider focusing on the Manual Management and Key Personnel subsystems.

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Figure 10-30. PH-06 Voluntary Programs Data

Condition: Air carrier voluntary program data may be useful for hazard or risk identification. Such data can aid the air carrier in managing corrective and followup actions.

Background: The FAA encourages air carrier participation in voluntary programs. Many of these programs provide unparalleled data opportunities, and therefore more effective opportunities for risk identification and control. The FAA will pursue harmonization of these programs and their integration with ATOS. These programs include but are not limited to Internal Evaluation Programs (IEP), Aviation Safety Action Programs (ASAP), Flight Operational Quality Assurance (FOQA), or Independent Flight Safety programs such as the Commercial Aviation Safety Team (CAST), www.cast-safety.org.

Properly managed, these programs help move safety management from the reactive mode to a data-driven, proactive mode that continuously searches for accident precursors. Data-sharing and open communication optimize the functioning of the oversight system and leverage resources to advance safety. If the air carrier does participate in one or more of these programs in this indicator, please consider the actual data from any internal risk management (RM) program(s) (IEP, ASAP, etc.), and how it relates to the ongoing identification and management of risk. Voluntary Disclosure Reporting Program (VDRP) information is protected from the Freedom of Information Act (FOIA).

Risk Score	Inspector Considerations
1–2	The air carrier participates in voluntary programs. Data derived from the air carrier's voluntary programs indicates apparent risk is well managed by air carrier systems. Root causes have been accurately identified and corrective actions are effective.
3–5	Concern exists from the data derived from the air carrier's voluntary program(s) due to considerations such as: • Inability to effectively define root cause, ineffective voluntary disclosure process at the air carrier. • Poorly documented procedures at the air carrier for voluntary disclosure process. • Management does not encourage use of any voluntary program. • Voluntary programs have not reduced problems or violations. • Corrective actions were inadequate or the implementation of corrective actions was not effective, as evidenced by repeated violations. • Company employees do not understand or use voluntary programs. • Concern exists because data from air carrier voluntary programs appear to indicate a rapid degradation of the air carrier's critical systems, and apparent air carrier failure to address the associated risks. • Concern exists because the air carrier's voluntary programs data appear to indicate a negative trend with escalation in severity. • The air carrier does not actively participate in voluntary programs.

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Figure 10-30. PH-06 Voluntary Programs Data (Continued)

6–7	Concern exists because data from air carrier voluntary program(s) appear to indicate a rapid degradation of the air carrier's critical systems, and apparent air carrier failure to address the associated risks. Concern exists because air carrier's voluntary programs data appear to indicate a negative trend with escalation in severity.

Guidance References (current editions): FAA Order 8900.1, Volume 3, Chapter 44, Assess Continuing Analysis and Surveillance System for Parts 121 and 135; Volume 6, Chapter 2, Section 30, Monitor Continuing Analysis and Surveillance Program/Revision for Part 121/135 Operators and Part 91 Subpart K Program Managers; Volume 11, Chapter 2, Section 1, Aviation Safety Action Program; Volume 11, Chapter 2, Section 2, Flight Operational Quality Assurance (FOQA); ATOS; Safety Attribute Inspection (SAI) 1.3.11; Element Performance Inspection (EPI) 1.3.11; Advisory Circular (AC) 120-79, Developing and Implementing an Air Carrier Continuing Analysis and Surveillance System; AC 120-59, Air Carrier Internal Evaluation Programs; AC 120-66, Aviation Safety Action Programs (ASAP); and https://av-info.faa.gov/vdrp/.

Data Sources: Data from any internal RM program(s) (IEP, Continuing Analysis and Surveillance (CAS), VDRP, ASAP, etc.)

Impact on ATOS System, Subsystem, and Elements: Associate the data that causes concern with the ATOS system, subsystem, and element model. Consider element(s) that might be affected, and/or element(s) relating to root causes. Ensure that the air carrier has completed a Root Cause Analysis (RCA) of the event(s) that lead to voluntary disclosure. Check that the air carrier implements a corrective action and that they follow up to determine if the corrective action was effective.

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Figure 10-31. PH-07 Surveillance Indicators

Condition: Surveillance data from Safety Performance Analysis System (SPAS), Program Tracking and Reporting Subsystem (PTRS), and ATOS help to identify trends in air carrier performance and can assist with identifying risks in an air carrier's system design.

Background: Data from ATOS- and SPAS/PTRS-based surveillance provides inspectors with insight into ongoing and new areas of risk in the air carrier's performance. Continued adverse findings should lead to corrective action, but may also indicate risk that has yet to be fully mitigated. Inspector experience and judgment concerning areas of repeated or ongoing difficulty would also bear some level of equivalency as a data source when assessing this indicator.

Risk Score	Inspector Considerations
1–2	Insufficient data exist for the purpose of this risk indicator as defined above to make a determination. ATOS/SPAS data trends for the air carrier do not indicate any area(s) or trend(s) of apparent risk, or indicated risk currently being mitigated by other means.
3–5	Concern exists in ATOS/SPAS data trends for considerations such as: • Decline in air carrier performance on reported surveillance. • Repeated items of concern in the same area(s) in data. • Failure to implement applicable Information for Operators (InFO) or Safety Alerts for Operators (SAFO) into the air carrier's system.
6–7	Concern exists because ATOS/SPAS data trends indicate major deviation from the baseline in critical operational and/or maintenance area(s). Air carrier is not addressing the associated risk(s). Concern exists because ATOS/SPAS trending appears to indicate a negative trend with escalation in severity. Concern exists because oversight in this area has been postponed due to lack of FAA resources.

Guidance References (current editions): FAA Order 8900.1, Volume 6, Chapter 2, Section 2, Reporting on Surveillance for Parts 121, 135, and 91 Subpart K; Volume 10, Chapter 1, Section 2, Introduction to ATOS Business Process and Tools; Volume 10, Chapter 2, Procedures for Design and Performance Assessment; and ATOS Automation User Guide, System Data Analysis Guide.

Data Sources: ATOS database, SPAS, and inspector observation/knowledge of performance history.

Impact on ATOS System, Subsystem, and Elements: For negative SPAS trends related to PTRS surveillance findings, associate the problem area(s) with the corresponding ATOS system(s), subsystem(s), and element(s). For negative ATOS data trends, focus on the element(s) that are the source of the adverse trend. Consider also the related manuals, training, and personnel systems that support the element(s) adversely affected.

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Figure 10-32. OS-01 Key Management SPAS Indicators

Condition: Changes in key management personnel can significantly impact an air carrier's system and Operational Stability (OS).

Background: The Safety Performance Analysis System (SPAS) management indicator incorporates the SPAS performance measures related to changes in the following key management personnel: chief executive officer (CEO), chief inspector, chief pilot, Director of Maintenance (DOM), Director of Operations (DO), Director of Safety (DOS), and general manager. Consider the size of the air carrier. The impact of SPAS indicators on small air carriers or a new entrant may be greater than on large, established air carriers. Key management personnel at a small air carrier may play multiple roles. High key-management turnover could significantly impact the air carrier's OS if no processes are in place to manage the change. Regardless of the number of years an air carrier has been in operation, the changes reflected in the SPAS indicators should be considered in light of their potential impact on system and OS.

Risk Score	Inspector Considerations
1–2	The air carrier has not experienced a change in its key management personnel. There may have been changes in key management personnel, but SPAS flag state is expected.
3–5	Concern exists due to considerations such as: • SPAS flag states are at the concern or advisory threshold. • Changes in key management personnel appear to have adversely affected the air carrier's programs, regardless of SPAS flag state.
6–7	Concern exists because of rapid and widespread changes in key management in nearly all departments and operational areas.

Guidance References (current editions): FAA Order 8900.1, Volume 3, Chapter 34, Section 1, Air Carrier Mergers and Acquisition of Air Carrier Operational Assets; Volume 10, Chapter 4, Section 1, The Air Carrier Evaluation Process.

Data Sources: SPAS, air carrier interviews, labor unions, air carrier press releases, and air carrier regulatory notifications.

Impact on ATOS System, Subsystem, and Elements: When concern exists regarding a change in key air carrier management positions required by regulation, focus on the corresponding and interfacing ATOS element(s) for these positions. Consider also the impact on other ATOS system(s), subsystem(s), and element(s) depending upon the position jurisdiction and safety purview related to the changed position.

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Figure 10-33. OS-02 Financial Conditions

Condition: Air carriers that experience adverse financial conditions may have higher risk.

Background: When an air carrier experiences financial instability, the possibility for risk may increase due to a number of complex and interrelated causes, factors, and results. These may directly or indirectly impact various aspects of the air carrier's system, subsystem, element structure, and may overlap with other risk indicators, or become a causal factor for the generation of risk in other areas. FAA Order 8900.1, Volume 6, Chapter 2, Section 18, Evaluation of Air Carrier's Management of Significant Changes, discusses in detail the issues of risk management (RM) for air carriers. Figure 6-29, Financial Condition Assessment Decision Aid, of Volume 6, Chapter 2, Section 18 includes a decision aid for scoring risk as it relates to financial condition. This decision aid should be utilized to arrive at periodic assessments at the air carrier. Adverse findings on the decision aid for an ATOS carrier lead to Air Carrier Assessment Tool (ACAT) changes or the risk management process (RMP). If the inspector arrives at adverse scoring, he or she should consider this risk indicator, as well as other associated risk indicators that are alluded to in the scoring components for the Financial Condition Assessment Decision Aid.

Risk Score	Inspector Considerations
1–2	Financial Condition Assessment Decision Aid Score of 72–90.
3–5	Financial Condition Assessment Decision Aid Score of 46–71.
6–7	Financial Condition Assessment Decision Aid Score of 9–45.

Guidance References (current editions): FAA Order 8900.1, Volume 6, Chapter 2, Section 18, Evaluation of Air Carrier's Management of Significant Changes.

Data Sources: Periodic meetings between the FAA principal inspectors (PI) and air carrier management, conversations with knowledgeable air carrier personnel, documentation received from the air carrier or other appropriate agencies (Security and Exchange Commission, courts, banks, creditors, etc.), press, industry publications, Aviation Safety Information Analysis and Sharing (ASIAS), etc.

Impact on ATOS System, Subsystem, and Elements: This particular risk indicator has a potentially close association with other risk indicators. When associating this indicator with the ATOS system, subsystem, and element model, keep in mind that problems identified here may also have similar impact for other risk indicators as the risk indicator evaluation continues. Direct linkage might be possible between poor financial condition and the ATOS system, subsystem, and element model. Consider any element(s) where budget cuts might have adverse impact.

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Figure 10-34. OS-03 Change in Air Carrier Management

Condition: Changes in management personnel other than key management can significantly impact an air carrier's system and Operational Stability (OS).

Background: Middle management at a small air carrier may be primarily responsible for the quality of the air carrier's systems, and any major changes could be significant. A large air carrier may have additional resources that can be relied upon when air carrier middle management personnel change. Regardless of size, the significance of the change in air carrier management should be assessed to determine the potential impact on the air carrier's system and OS. The air carrier management may include personnel in the air carrier's safety, quality assurance (QA), engineering, operations, and maintenance departments. Changes in middle management in any of the air carrier's major lines of business should be considered. Changes in administrative management should also be considered though they may not have the same level of impact.

Risk Score	Inspector Considerations
1–2	There have been no changes in air carrier middle management. Changes in middle management are not of high concern as there appears to be little to no impact on the air carrier's system and OS. The air carrier has demonstrated appropriate and effective management of any events.
3–5	Concern exists for adverse impact at the air carrier due to change in middle management due to considerations such as: • Change in middle management is sudden and due to employee dissatisfaction. • Change in middle management does not appear to be a controlled change. • High change in middle management within the maintenance and/or operations organizations. • New or remaining staff is being retrained or cross-trained to perform the new or expanded functions. • Air carrier has not experienced change in middle management in its prior history.
6–7	Concern exists for adverse impact because of rapid and widespread changes in middle management in nearly all departments and operational areas. The air carrier has not demonstrated appropriate or effective management of the event(s).

Guidance References (current editions): FAA Order 8900.1, Volume 6, Chapter 2, Section 18, Evaluation of Air Carrier's Management of Significant Changes; and Volume 10, Chapter 4, Section 1, The Air Carrier Evaluation Process.

Data Sources: Air carrier information, labor information, and consultation with the air carrier or use of industry data may be helpful in identifying such changes and assessing their impact.

Impact on ATOS System, Subsystem, and Elements: Evaluate the organizational areas that the changed middle management positions oversee. Consider the impact of such dislocations on air carrier stability and operations, and focus on the ATOS system(s), subsystem(s), and element(s) corresponding to the changed middle manager's oversight responsibilities. Evaluate whether and how the changes might also adversely impact the training and technical administration system(s).

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Figure 10-35. OS-04 Turnover in Personnel

Condition: A high turnover of operations or maintenance personnel can dramatically increase the potential for risk in an air carrier's systems.

Background: Turnover in personnel may affect only the maintenance or operations organizations, or there may be a significant loss of key personnel throughout the entire organization. Maintenance personnel include staff members directly involved in ensuring the quality of the maintenance organization. Operations personnel include staff members directly involved in ensuring the quality of air carrier operations, including crewmembers (pilots and Flight Attendants (F/A)), dispatch, and training staff.

Risk Score	Inspector Considerations
1–2	The air carrier has not experienced significant turnover in personnel. Any turnover in personnel is minor and/or the air carrier has demonstrated appropriate and effective management of any events.
3–5	Concern exists for adverse impact at the air carrier due to turnover in personnel because of such considerations including: • Turnover of personnel is sudden and due to employee dissatisfaction. • Turnover of personnel does not appear to be a controlled change. • High turnover in personnel within the maintenance and/or operations organizations. • New or remaining staff is being retrained or cross-trained to perform the new or expanded functions.
6–7	Concern exists for adverse impact due to widespread and rapid personnel turnover in safety-sensitive areas with very high impact on critical systems. The air carrier has not demonstrated appropriate or effective management of the event(s).

Guidance References (current editions): FAA Order 8900.1, Volume 6, Chapter 2, Section 10, Operator Trip Records Inspections (PTRS Code 1628); Volume 6, Chapter 2, Section 18, Evaluation of Air Carrier's Management of Significant Changes; and Volume 3, Chapter 34, Section 1, Air Carrier Mergers and Acquisition of Air Carrier Operational Assets.

Data Sources: Direct queries of company management, union announcements, company newsletters, bulletins, etc.

Impact on ATOS System, Subsystem, and Elements: Evaluate the areas of the company's operation that is losing personnel. Match the diminished job function(s) to the ATOS system, subsystem, and element model to assess impact. Consider also the impact on training, manual, and technical administration systems. If inspector concern is centered upon retraining, or cross-training of employees, focus on the personnel training and qualification system.

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Figure 10-36. OS-05 Reduction in Workforce

Condition: A reduction in the air carrier's workforce can dramatically increase the potential for failure in an air carrier's systems.

Background: Workforce reductions, layoffs, or buyouts may or may not impact safety and the potential for noncompliance; it depends on how and why they occur, and who is involved.

Risk Score	Inspector Considerations
1–2	The air carrier has not experienced reduction in workforce. There has been little reduction in workforce and/or the air carrier has demonstrated appropriate and effective management of any events.
3–5	Concern exists for adverse impact at the air carrier due to reduction in workforce due to considerations such as: • Reduction of personnel does not appear to be a controlled change, pace and rate of reduction is abrupt, haphazard, uncoordinated, or occurring over very short timeframe. • Reduction in personnel within the maintenance and/or operations organizations. • Reduction affected most experienced personnel and/or of quality, safety, or training personnel. • Air carrier has not experienced a comparable reduction in workforce in its prior history.
6–7	Concern exists for adverse impact at the air carrier due to widespread and rapid personnel reduction in safety sensitive areas with very high impact on critical systems. The air carrier has not demonstrated appropriate or effective management of the event(s).

Guidance References (current editions): FAA Order 8900.1, Volume 6, Chapter 2, Section 18, Evaluation of Air Carrier's Management of Significant Changes.

Data Sources: Direct queries of company management, union announcements, company newsletters, bulletins, etc.

Impact on ATOS System, Subsystem, and Elements: Evaluate the areas of the company's operation that is losing personnel. Match the diminished job function(s) to the ATOS system, subsystem, and element model to assess impact. Consider also the impact on training, manual, and technical administration systems.

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Figure 10-37. OS-06 Rapid Growth/Downsizing

Condition: Times of significant change such as rapid expansion or downsizing can impact air carrier operations due to the possible misalignment of resources and operational requirements.

Background: Growth may be quite apparent in the addition of new aircraft, routes, and employees. It may also be less apparent; growth may be in the form of the addition of new programs or business practices (e.g., the addition of a repair station certificate or an increase in aircraft utilization.) Downsizing may also be apparent in the reduction of aircraft, routes and employees, or in less apparent operational areas. It is also possible for an air carrier to simultaneously experience rapid change in the areas of growth and downsizing (e.g., an air carrier's business plan could include a dramatic reduction in workforce with a simultaneous expansion in routes.) If organizational structures and support resources do not keep pace with the tempo of operations and the changes, safety problems can occur.

Risk Score	Inspector Considerations
1–2	The air carrier is not presently experiencing rapid growth or downsizing. Rapid growth or downsizing appears to be effectively managed by the air carrier's procedures, controls, and process measures. Any adverse impact appears to be negligible to nonexistent; and/or Rapid Growth/Downsizing Assessment Decision Aid score between 43 and 60.
3–5	The air carrier may not have properly implemented its rapid growth/downsizing plan. Concern exists due to considerations such as: • Delay, cancellation and reliability rates. • Minimum equipment lists (MEL) carried daily. • Turn times between flights and/or ground time for maintenance, crew rest requirements, misallocation of resources. • Adequacy of training and training department personnel; and/or • Rapid Growth/Downsizing Assessment Decision Aid score between 25 and 42 related to growth, downsizing, or simultaneous combination.
6–7	Concern exists since the air carrier is not using any projected business plan to govern the growth or downsizing; and/or Rapid Growth/Downsizing Assessment Decision Aid score between 6 and 24 related to growth, downsizing, or simultaneous combination.

Guidance References (current editions): FAA Order 8900.1, Volume 6, Chapter 2, Section 18, Evaluation of Air Carrier's Management of Significant Changes.

Data Sources: Air carrier programs, operations specifications (OpSpecs), discussion with air carrier personnel, performance history of risk management (RM) programs, and Data Collection Tools (DCT).

Impact on ATOS System, Subsystem, and Elements: Since rapid expansion, growth, or downsizing virtually affects the whole operation of an air carrier, it can be difficult to pinpoint specific areas in the operation that may present a risk. If the Rapid Growth/Downsizing Assessment Decision Aid (FAA Order 8900.1, Volume 6, Chapter 2, Section 18, Figure 6-30, Rapid Growth/Downsizing Assessment Decision Aid) was used, focus on the word pictures where the individual scoring was low, and consider any corresponding ATOS element(s).

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Figure 10-38. OS-07 Merger or Takeover

Condition: Air carriers must effectively manage mergers or takeovers to ensure continued compliance and safe operating practices.

Background: A merger or takeover may include a combination of divergent corporate and organizational structures and safety cultures. Some merger or takeover transactions may simply be a name change or may occur at a level that does not alter or impact safety-sensitive operations. In these cases, the impact on system or Operational Stability (OS) may be minimal.

Risk Score	Inspector Considerations
1–2	The air carrier has not experienced a merger or takeover. The air carrier appears to be effectively managing the risk associated with the merger or takeover. Adherence to new processes, procedures, and programs appears to be adequate. Any adverse impact is negligible to nonexistent, or unrelated to safety-sensitive issues.
3–5	Concern exists for adverse impact at the air carrier due to considerations such as: • The impact of a merger or takeover may not be effectively managed by the air carrier's procedures, controls, and process measures. • The air carrier's key personnel and others have little to moderate experience with the new type and complexity of the operation. • Evidence of lack of attention to interfaces between processes, procedures, and programs across departments. • Evidence of inadequacies in adherence to new processes, procedures, and programs.
6–7	Concern exists for adverse impact because the air carrier has no transition plan in place for accomplishing the merger or acquisition. The air carrier's key personnel and others have no experience with the new type and complexity of the operation. The air carrier has not demonstrated appropriate or effective management of the event(s).

Guidance References (current editions): FAA Order 8900.1, Volume 5, Chapter 3, Section 1, Application Phase—ATP Applicants Engaged in Operations Under Title 14 CFR Part 121, 135, or 91 Subpart K (Part 91K)—Airplanes and Helicopters; Volume 3, Chapter 34, Section 1, Air Carrier Mergers and Acquisition of Air Carrier Operational Assets; and Volume 3, Chapter 34, Section 2, Major Changes in Operating Authority.

Data Sources: Office of the Secretary of Transportation (OST), media, air carrier personnel, labor unions, Data Collection Tools (DCT), and Safety Performance Analysis System (SPAS).

Impact on ATOS System, Subsystem, and Elements: Look at system(s), subsystem(s), and element(s) associated with the risk by evaluating where the largest changes/program differences or most serious lack of attention to interfaces could exist. Consider focusing also on the ATOS elements dealing with training and technical administration/management support for these areas of concern.

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Figure 10-39. OS-08 Labor–Management Relations

Condition: A poor or deteriorating labor–management relationship can create risk.

Background: Good labor–management relations are critical to the system and Operational Stability (OS) of the air carrier. A threatened or actual shutdown in operations can have an adverse economic impact on an air carrier and can greatly affect the stability of an air carrier's systems. Areas to consider include the status of the bargaining agreements between air carrier labor and management, job function(s) of employee groups in adversarial relationship with management, and the potential effect(s) on the air carrier's systems, subsystems, and elements.

Risk Score	Inspector Considerations
1–2	The air carrier appears to have no adverse labor–management relations issues at this time. The air carrier has demonstrated appropriate and effective management of any labor–management issues or events.
3–5	There appear to be difficulties in the air carrier's labor–management relations. Concern exists due to considerations such as: • Informational picketing is being conducted by employees against the air carrier. • Newspaper advertisements, billboards, or other methods that describe lack of contract negotiations or bargaining have been purchased by either the employee groups or management of the air carrier. • Cross-utilization of employees in safety-sensitive areas due to the unrest (e.g., management working line functions in addition to their normal managerial responsibilities). • Requests for employee concessions by management and/or lower-than-industry average compensation and benefits.
6–7	Concern exists regarding direct adverse impact of poor labor–management relations on safety. Employee group(s) actively conducting a work stoppage due to labor unrest at the air carrier. The air carrier has not demonstrated appropriate or effective management of the event(s).

Guidance References (current editions): FAA Order 8900.1, Volume 7, Chapter 1, Section 1, Accident Investigations; Volume 7, Chapter 1, Section 2, Incident Investigations and Occurrences; and Volume 8, Chapter 5, Section 6, Process Service Difficulty Report.

Data Sources: Safety Performance Analysis System (SPAS) data packages, FAA Accident Investigation Records, Investigation of Pilot Deviation Reports, Accident/Incident Corrective Action Records, Aircraft Accident/Incident Preliminary Notices, National Transportation Safety Board (NTSB) findings/reports, Mechanical Interruption Summary (MIS) reports, Service Difficulty Report (SDR), Data Collection Tool (DCT) 1.2.4 Mechanical Interruption Summary Reports.

Impact on ATOS System, Subsystem, and Elements: If root cause(s) and/or failure of event(s) is generally known and validated, consider the system(s), subsystem(s) and element(s) in the ATOS structure that relate to the failure or root cause. Consider also the ATOS Training and Technical Administration systems. If the air carrier has not effectively and appropriately managed the events, consider also the ATOS Manuals and Technical Administration Systems.

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Figure 10-40. CD-01 New/Major Changes to Program

Condition: Safety issues may develop from new or changed programs and may increase the potential for noncompliance with existing processes and controls.

Background: New or changed programs at an air carrier should be assessed to determine if and how they affect the air carrier's operations, training, and maintenance system. Some program changes are significant enough to require an operations specification (OpSpec) amendment, such as Extended Operations (ETOPS), but some new or changed programs are less apparent (e.g., a sales and marketing initiative adding additional destinations might drive a program change to increase fleet utilization, and cause a reduction in ground time and aircraft servicing, which may induce safety-related risks). Any new program or program change that affects the air carrier's systems could have a significant impact on the air carrier's safety profile.

Risk Score	Inspector Considerations
1–2	There are no new or major changes to air carrier programs. There are well-established and maintained system controls, with fully documented procedures, which have allowed the air carrier to absorb new programs or program changes without affecting quality or safety. The air carrier has demonstrated appropriate and effective management of the situation.
3–5	Concern exists regarding adverse impact of new/major changes at an air carrier due to considerations such as: • Major changes to programs are inadequately described and documented. • Major changes are motivated by cost-cutting • The affected department(s)'s system control(s) do not have the sufficient degree of strength and comprehensiveness to support the new/changed program. • Air carrier's staff size and capabilities do not meet the requirements of the changed program and/or are not sufficiently trained, and/or air carrier past performance history with new/changed programs.
6–7	Concern exists because air carrier infrastructure supporting the safety related aspects of the new or changed program does not exist at all. The controls in place no longer support the changed program or no controls exist for a new program. The air carrier has not demonstrated appropriate or effective management of the event(s) and concern exists for extremely adverse impact.

Guidance References (current editions): Not applicable.

Data Sources: Notifications by carrier, OpSpecs revisions, validation flight results, training program revisions, and air carrier performance history.

Impact on ATOS System, Subsystem, and Elements: Identify the operational area where the change has taken place. In some cases, the new/changed program will correspond exactly with an ATOS element. Some examples include ETOPS, Reduced Vertical Separation Minimums (RVSM) authorizations, lower landing minimums, and exit seating. Remember to consider the interfacing ATOS systems, such as the training, manual, and Technical Administration systems. In other cases, the new/major change to program will not have a direct parallel with a specific element. In these cases, focus on the operational context of the change and look for the element(s) that would most likely be impacted. Also consider supporting manual, training, and Technical Administration systems.

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Figure 10-41. CD-02 Continuing Analysis and Surveillance System (Airworthiness only)

Condition: Air carriers with a poorly functioning Continuing Analysis and Surveillance System (CASS) can overlook and improperly manage increased levels of risk.

Background: A CASS provides the air carrier with an internal diagnostic and evaluation tool (audit and surveillance) for continuously monitoring and correcting deficiencies in its maintenance program through a system of ongoing data collection, data analysis, and trend reporting. When implemented and maintained within an environment that includes clear definition of responsibilities, process independence; management commitment; continuity; scheduled evaluation, corrective action and followup, and clear, concise, and available documentation, CASS can provide the air carrier with one critical means of ensuring management control over the maintenance organization. The CASS is an integral piece of an air carrier's comprehensive maintenance and inspection program. As such, it requires consistent oversight not only by the carrier's responsible personnel but also by the principal inspectors (PI). It is incumbent on the Certificate Management Team (CMT) to monitor this program and identify and request corrective action of any shortcomings in the CASS.

Risk Score	Inspector Considerations
1–2	The air carrier appears to have an effective CASS in place and is using the data generated therein to continuously monitor and correct deficiencies in its maintenance program. The air carrier has demonstrated appropriate and effective management of any events.
3–5	Concern exists regarding the air carrier's ability to manage a comprehensive CASS due to considerations such as: • Recurring findings after the issues have been mitigated by CASS. • Continuing Analysis and Surveillance (CAS) corrective actions result in new problem(s). • Recurring CASS findings are associated with the same ATOS subsystem(s). • CASS results are inconsistent with other outside audit results, such as those conducted by the FAA and Department of Defense (DOD). • There is no internal audit system of CASS (e.g., Safety Audit Program). • Air carrier has no CASS performance history.
6–7	Concern exists that the carrier does not have a functioning CASS in place as indicated by an Internal Evaluation Program (IEP), safety program, or other equivalent program(s). The air carrier has not demonstrated appropriate or effective management of the situation.

Guidance References (current editions): FAA Order 8900.1, Volume 3, Chapter 43, Section 1, Evaluate a Part 121 and Part 135 Continuous Airworthiness Maintenance Program; Volume 3, Chapter 44, Section 1, Evaluating an Air Carrier's CASS; Volume 6, Chapter 2, Section 30, Monitor Continuing Analysis and Surveillance System/Revision for Part 121/135 Operators and Part 91 Subpart K Program Managers; Advisory Circular (AC) 120-16, Air Carrier Maintenance Programs; AC 120-59, Air Carrier Internal Evaluation Programs; AC 120-79, Developing and Implementing an Air Carrier Continuing Analysis and Surveillance System; ATOS Safety Attribute Inspection (SAI) 1.3.11 and Element Performance Inspection (EPI) 1.3.11.

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Figure 10-41. CD-02 Continuing Analysis and Surveillance System (Airworthiness only) (Continued)

Data Sources: Periodic reliability reports, monthly CASS meetings, surveillance reports from both Safety Performance Analysis System (SPAS) and the ATOS database, DOD findings, and air carrier past performance including element 1.3.11.

Impact on ATOS system, Subsystem, and Elements: In addition to the actual ATOS element dedicated to CASS (1.3.11), consider how the deficiencies identified in the CASS may impact other ATOS system(s), subsystem(s), and element(s).

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Figure 10-42. CD-03 Safety Management

Condition: Air carriers who do not have a Safety Management System (SMS) may not understand or adequately control hazards to operational safety.

Background: An SMS is essentially a business management approach to controlling risk. A risk management (RM) system provides the company's management with a detailed roadmap for monitoring safety-related processes. RM systems may incorporate one or more voluntary programs such as an Aviation Safety Action Program (ASAP), and Internal Evaluation Program (IEP). Both of these programs have a strong relationship to the functions of Safety Assurance (SA) and safety promotion. Air carriers are encouraged to consider integrating these programs into their comprehensive approach to safety management. Safety management concentrates more on the control of processes rather than efforts targeted toward extensive inspection and remedial actions on end products. A good system will include safety quality policy, safety RM, SA, and safety promotion.

Risk Score	Inspector Considerations
1–2	The air carrier appears to have an effective SMS in place and is utilizing the data generated therein to continuously monitor and correct deficiencies in its critical programs to adapt to the air carriers' changing environment. The air carrier has demonstrated appropriate and effective management of the situation.
3–5	Concern exists regarding the air carrier's ability to manage a risk due to considerations such as: • The air carrier does not have policies and procedures that define a method by which risk is managed. • The air carrier does not have an RM process to monitor the critical programs. • The carrier does not have a safety assurance process; this is equivalent to an IEP. • The carrier does not promote safety—safety culture must allow for communication and a means for employees to report safety deficiencies without fear of reprisal.
6–7	Concern exists that the air carrier does not have a SMS or an equivalent method to assess and mitigate safety risk. It does not have an effective method of monitoring its safety-critical programs to ensure it is adapting to the air carrier's changing environment.

Guidance References (current editions): FAA Order 8900.1, Volume 3, Chapter 24, Section 2, Evaluate and Accept a Maintenance Human Factors Training Program; Volume 3, Chapter 44, Section 1, Evaluating an Air Carrier's CASS; Volume 6, Chapter 2, Section 30, Monitor Continuing Analysis and Surveillance System/Revision for Part 121/135 Operators and Part 91 Subpart K Program Managers; ATOS Safety Attribute Inspection (SAI) 1.3.11; Element Performance Inspection (EPI) 1.3.11; Advisory Circular (AC) 120-79, Developing and Implementing an Air Carrier Continuing Analysis and Surveillance System; AC 120-59, Air Carrier Internal Evaluation Programs; AC 120-66, Aviation Safety Action Programs (ASAP); and AC 00-58, Voluntary Disclosure Reporting Program.

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Figure 10-42. CD-03 Safety Management (Continued)

Data Sources: Periodic reliability reports, monthly Commerical Aviation Service (CAS) meetings, surveillance reports from Safety Performance Analysis System (SPAS) and the ATOS database, Department of Defense (DOD) audit findings, shared information, and data collected from Voluntary Disclosure Reporting Programs (VDRP).

Impact on ATOS System, Subsystem, and Elements: If weakness in a critical program has been identified, concentrate on the area(s) the critical program manages. Relate those area(s) to corresponding ATOS system(s), subsystem(s), and element(s). Consider also focusing on manuals and key personnel subsystems.

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Figure 10-43. CD-04 Relationship with the FAA

Condition: The air carrier's relationship with its assigned FAA personnel may provide insights into the air carrier's compliance posture and safety culture.

Background: Strong communication, a high level of trust, and a good working relationship between air carrier personnel and FAA personnel assigned to monitor the air carrier can have a positive impact on quality and safety. Conversely, a weak communications infrastructure and a lack of trust between parties can have a negative impact on air carrier operations, quality, and safety. This, in turn, can affect the stability of the air carrier's systems, and may be an indication of risk.

Risk Score	Inspector Considerations
1–2	The air carrier appears to have a cooperative relationship with assigned FAA personnel.
3–5	Concern exists regarding the air carrier's relationship with the FAA due to considerations such as: • Little or no history of strong two-way communication between the air carrier and assigned FAA personnel. • Recent indications of unwillingness to share data and findings with assigned FAA personnel on the part of the air carrier. • FAA recommendations and suggestions not welcomed by the air carrier.
6–7	Concern exists due to apparent failure of cooperation with assigned FAA personnel in critical air carrier areas. The air carrier has not demonstrated appropriate or effective management of this situation.

Guidance References (current editions): FAA Order 8900.1, Volume 10, Chapter 1, Section 2, Introduction to ATOS Business Process and Tools.

Data Sources: FAA personnel assigned to the air carrier, meetings with air carrier personnel, written correspondence between air carrier and Certificate Management Team (CMT)/certificate-holding district office (CHDO).

Impact on ATOS System, Subsystem, and Elements: Consider which subsystem(s) and element(s) are directly affected by the perceived lack of cooperation and/or communication (e.g., if the company department/personnel overseeing Flight Attendants (F/A) are not cooperative with the FAA, consider which ATOS system(s), subsystem(s), and element(s) may have associated adverse impact and risk due to that lack of cooperation.)

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Figure 10-44. CD-05 Human Factors

Condition: Risk may exist due to human lapses in the air carrier's design and/or performance.

Background: "Human factors" is an umbrella term for the myriad effects of human interaction with a system. When humans act within established parameters, the system functions as designed. When humans deviate from established parameters, the system is degraded and moves into areas of unknown levels of risk and accidents and incidents occur. To achieve the level of safety desirable in high-consequence operations such as airlines, an organization's systems must function in a variety of circumstances without degradation. Standard operating procedures (SOP) and controls can be introduced into the system to lessen the potential for human variability or increase the system's tolerance for human variability. A certificate holder's failure to develop and implement effective SOPs and controls could increase the level of risk in the system and processes.

Risk Score	Inspector Considerations
1–2	There were no observed human factors lapses at the air carrier. Any human factors lapses were minor. The air carrier has demonstrated appropriate and effective management of any events.
3–5	Concern exists that the air carrier has inadequate human factors design or performance due to considerations such as: • Human factors not integrated into air carrier's training program. • Human factors not integrated into air carrier's safety systems. • Air carrier's process does not address root cause of human factors problems such as employee ownership, incentive contracts, and other financial incentives. • Air carrier system controls are ineffective. • Substantial number and/or type of human factors performance errors have occurred at the air carrier.
6–7	Concern exists due to repeated and critical human factors performance errors that remain uncorrected and appear to indicate a negative trend with escalation in severity. The air carrier has not demonstrated appropriate or effective management of the event(s).

Guidance References (current editions): FAA Order 8900.1, Volume 3, Chapter 24, Section 2, Evaluate and Accept a Maintenance Human Factors Training Program; Volume 11, Chapter 4, Human Factors Involved in Inspection and Repair in a Heavy Maintenance Environment; and FAA Order 9550.8, Human Factors Policy.

Data Sources: ATOS Data Collection Tools (DCT), particularly Safety Attribute Inspection (SAI) controls section and Element Performance Inspection (EPI) performance measures; Safety Performance Analysis System (SPAS) and Program Tracking and Reporting Subsystem (PTRS) data; Aviation Safety Information Analysis and Sharing (ASIAS) database; and National Transportation Safety Board (NTSB) database.

Impact on ATOS System, Subsystem, and Elements: Human factors issues could potentially impact every air carrier system as all systems involve human input and interaction with the system. Lapses in human factors design may exist in manual management, maintenance

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Figure 10-44. CD-05 Human Factors (Continued)

organization, and training program. Consider the location of the concern. Focus on elements with past negative findings in SAI controls attribute and/or EPI performance measures. Consider if training and technical administration design or performance also contributes to the risk.

RESERVED. Paragraphs 10-127 through 10-141.

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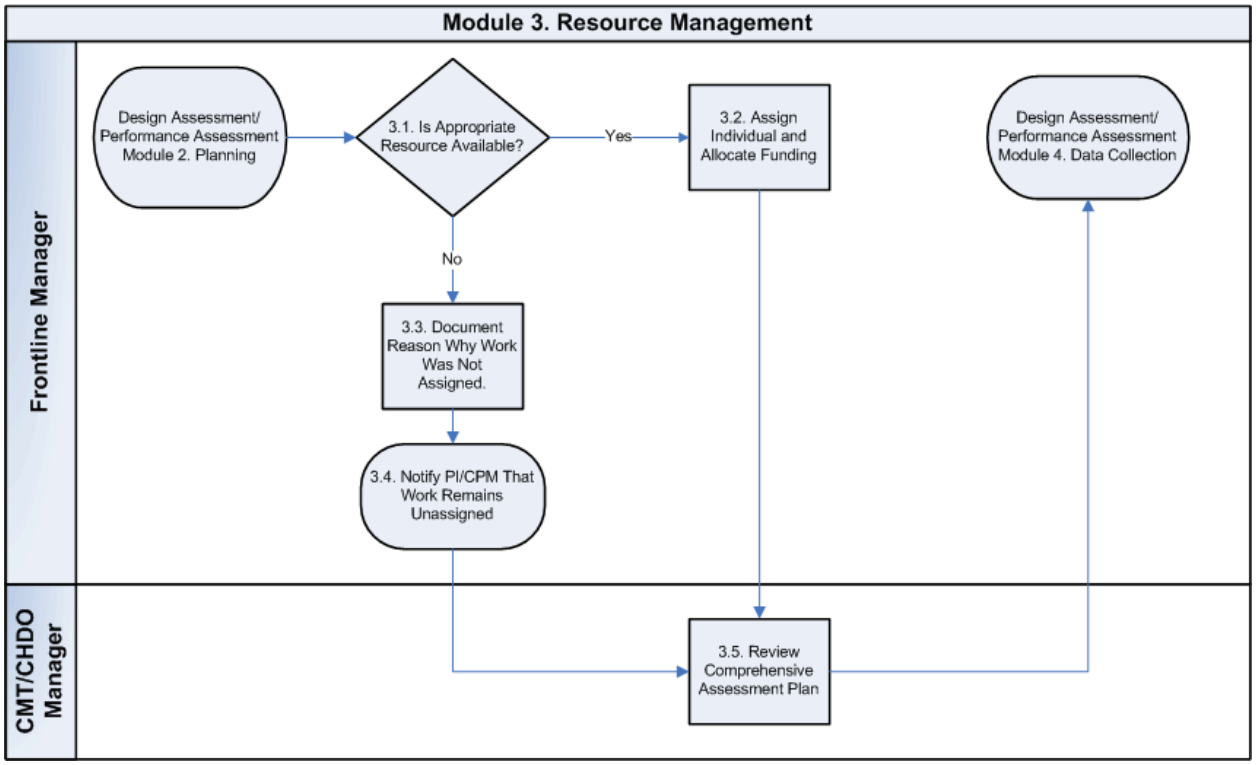
VOLUME 10 AIR TRANSPORTATION OVERSIGHT SYSTEM

CHAPTER 2 PROCEDURES FOR DESIGN AND PERFORMANCE ASSESSMENT

Section 3 Design and Performance Assessment Resource Management

Figure 10-45. Module 3: Resource Management



10-142 RESOURCE MANAGEMENT.

A. Introduction. Resource management is an ongoing process to ensure that available resources are assigned to the highest risk priorities identified in the Comprehensive Assessment Plan (CAP) for continuing operational safety. By comparing the prioritized CAP and available resources, managers ensure that available resources are assigned to tasks with the highest safety priority for a given quarter. Prioritizing and assigning resources based on risk is a critical aspect of the Air Transportation Oversight System (ATOS). CAPs are created independent of resources. Quarterly work programs consist of Design Assessments (DA) and Performance Assessments (PA) that are assigned to inspectors. Unassigned DAs and PAs are eventually documented as work not accomplished because resources are not available.

B. Insufficient Resource Availability. Allocate funding to complete the job at the same time the individual is assigned. If resources are not available, the manager leaves the work unassigned and documents the reasons why. The principal inspector (PI) or certification project manager (CPM) receives notification that the work was not assigned. When insufficient

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resources are available to complete all the work, the Front Line Manager (FLM) uses the CAP to establish priority when making assignments.

10-143 AVAILABILITY OF APPROPRIATE RESOURCE. The FLM evaluates the CAP against the roster of the Certificate Management Team (CMT) or the Certification Project Team (CPT) to determine whether the appropriate resources are available to accomplish the assessment activities. The FLM considers scheduled leave, scheduled training, training requirements, and other potential constraints. For a certification project, the certificate-holding district office (CHDO) and the Regional Office (RO) determine adequate resource availability during the initial evaluation per the Certification Services Oversight Process (CSOP). The manager should consider the availability of the Flight Standards National Field Office (AFS-900) Certificate Program Office, and regional and national specialist availability (e.g., resource pilot support). (See flowchart process step 3.1.)

A. Roster Maintenance. The manager ensures that the roster accurately reflects CMT or CPT membership as active qualified, active nonqualified, or inactive. The manager ensures CMT members do not remain on the roster when an operator surrenders its certificate.

1) Qualified Members. Active, qualified members are assigned to the CMT or CPT and meet the baseline training requirements for their assigned position. (See paragraph 10-144 for baseline requirements.)

2) Nonqualified Members. Active, nonqualified members assigned to the CMT or CPT that have not completed baseline training requirements. (See paragraph 10-144 for baseline requirements.)

3) Inactive Members. Inactive members are no longer assigned or available to the CMT or CPT.

NOTE: In the case of an FLM of shared resources who only assigns work, the Air Carrier-Specific Familiarization Briefing is not a requirement. If the FLM performs data review functions or conducts Safety Attribute Inspections (SAI), Element Performance Inspections (EPI), or Constructed Dynamic Observation Reports (ConDOR), then the Air Carrier-Specific Familiarization Briefing is required.

B. CMT Staffing. A dedicated CMT has oversight responsibility for each air carrier. The CMT develops and executes a CAP tailored to that air carrier. CMT staffing includes specific minimum required positions. Depending on air carrier complexity, additional positions may be necessary. The following individual position titles identify each required position:

1) CMT Manager (Required Position). The CMT manager is the office, section, or unit manager with overall responsibility for air carrier certificate management. The CMT manager is an advocate for ATOS policies, processes, and their integration into the business strategies and operations of the office. The manager will assign inspector resources to the highest safety priorities for a given quarter.

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2) FLM(s). FLMs directly supervise, assign, and review the work of CMT members.

3) Principal Operations Inspector (POI), Principal Maintenance Inspector (PMI), and Principal Avionics Inspector (PAI) (Required Position). A PI should not be assigned to more than one Title 14 of the Code of Federal Regulations (14 CFR) part 121 air carrier CMT.

4) Data Reviewer/Data Evaluation Program Manager (DEPM) (Required Position). A DEPM may be assigned to the CMT as a shared resource. In the absence of a DEPM, an FLM can serve as a data reviewer. The DEPM reports to an FLM above the PI. The data reviewer/DEPM must be qualified as an air carrier inspector. A DEPM should be assigned to no more than four CMTs. Shared DEPMs report to only one CMT manager and only one FLM, as determined by their RO.

a) Aviation Safety Inspectors (ASI). All ASIs assigned to the air carrier certificate are members of the CMT. ASIs are generally located at the CHDO or certificate management office (CMO), but more than one CMT can share them. Assigned ASIs can include those from the following areas of expertise: flight operations, maintenance, avionics, cabin safety, and dispatch. Each CMT has at least one ASI-Cabin Safety (ASI-CS), and one ASI-Aircraft Dispatcher (ASI-AD) (required positions). The ASI-CS and ASI-AD may be shared resources. Priority assignment must be a consideration to support CMTs with oversight responsibility of air carriers involved in passenger carriage.

b) Shared ASIs. The CMT office manager may approve the use of shared ASIs. Management should not assign an ASI to more than four CMTs. Shared ASIs report to only one CMT manager and only one FLM, as determined by their RO. The ASI's FLM will make the final decision when there is conflict over work requests.

c) Requirements for Remotely Sited Positions. Under certain circumstances, ASIs may have a base location other than the CHDO or CMO. Regional division managers are responsible for establishing and approving remotely sited positions.

1. Regional division managers establish these positions only for situations where the air carrier has very large, noncontract training or maintenance centers located far from the CHDO.

2. A remotely sited position may also be necessary with the expectation of an ongoing, full person-year of data collection for DAs and PAs associated with the CAP.

3. As the focus of ATOS is on systems-based assessments rather than event- or activity-based assessments, air carrier hubs and employee domiciles are not the sole consideration in this determination.

5) Operations Research Analyst (ORA). An ORA is assigned to each CMT. Regional or national analysts may provide analytical support.

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6) Aviation Safety Technicians (AST) and Aviation Safety Assistants (ASA). If ASTs and ASAs are assigned to the air carrier certificate, then they are members of the CMT.

C. CPT Staffing. A CPT is assigned to each initial certification project before the applicant initiating formal application. The CPT develops and executes a CAP that is tailored to that applicant.

1) General CPT Requirements. For air carriers certificated to operate under part 121, existing part 121 PIs are not used for new certification activities. Other ASIs currently assigned to a part 121 CMT may participate in new certification activities, to the extent that it does not compromise existing operator oversight. Available staffing for post-certification should exist or be reasonably projected to be available through reassignments or merit promotion selections. Existing part 121 PIs should not be used for new part 121 certification activities. Other ASIs currently assigned to a part 121 CMT may participate in new certification activities. CPTs for part 121 certification use only inspectors assigned to an air carrier position description.

2) CPT Members. CPT members include:

3) CPM. The CHDO manager designates one member of the certification team to serve as the CPM. The person designated as CPM should have completed the baseline training and should have previous experience in certifying an air carrier under part 121. A person designated as CPM should have experience as a PI.

a) Certification Team Leader (CTL). The AFS-900 Certification Program Office assigns a CTL and team members to each certification project. This person works with the CPM to communicate and coordinate all certification team activities and ensure adherence to the Certification Process Document (CPD).

b) Certification Team Members. The certification team should consist of at least an Operations inspector, a Maintenance inspector, and an Avionics inspector. Each certification project that involves passenger carriage has at least one ASI-CS assigned. If the certification is for a cargo-only operation, the certification team must consider cabin safety issues if the applicant has provisions or procedures for carriage of passengers specified in part 121 § 121.583(a). It is a requirement to use an ASI-AD. For each proposed aircraft type, there should be an operations inspector assigned to the team who is qualified in that aircraft type.

10-144 BASELINE TRAINING. An inspector may be assigned to a CMT or CPT before receiving baseline training, but inspectors cannot be assigned a SAI, or EPI, or ConDOR until they have received the baseline training. Baseline training is a combination of multiple prerequisite courses and any additional curricula that the CMT/CPT defines. The prerequisite course material is unique to each inspector specialty. Baseline training encompasses:

- All courses of all phases of the initial or transition air carrier training string for the inspector's specialty, including:
    - ATOS 1.2 Interactive Training for ASIs.
    - Safety management course.

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- Air-Carrier Specific Familiarization Briefing.
- ATOS 1.2 Interactive Training for PIs and Managers (required for all new PIs and managers).
- Other training. (See paragraph 10-146.) CMT Operations and Airworthiness inspectors programmed for their training may perform data collection activities.

NOTE: In the case of an FLM of shared resources who only assigns work, the Air Carrier-Specific Familiarization Briefing is not required. If the FLM performs data review functions or conducts SAIs, EPIs, or ConDORs, then the Air Carrier-Specific Familiarization Briefing is a requirement.

10-145 AIR CARRIER-SPECIFIC FAMILIARIZATION BRIEFING. ASIs are provided the Air Carrier-Specific Familiarization Briefing upon initial assignment to an ATOS CMT. (See Figure 10-46, Air Carrier-Specific Familiarization Briefing Outline of Subjects, for recommended topics.) The Federal Aviation Administration (FAA) considers inspectors assigned to a CPT or who were assigned to the air carrier when it transitioned to ATOS to have already received the required initial Air Carrier-Specific Familiarization Briefing during the certification or transition processes.

A. Applicability. Inspectors assigned to CMTs receive briefings in the general topics and subjects that are specific for their specialty. DEPMs receive briefings in the general topics and subjects specific to operations, cabin safety, maintenance, and avionics.

B. Methodologies. A combination of lectures, site visits, and directed self-study presents the air carrier-specific outline. The manager may decide to conduct the briefings one-on-one, or for a group of new CMT members. The FAA recommends completing the direct self-study during normal working hours. The FAA does not recommend using more than 50 percent of the recommended programmed hour requirements as directed self-study.

C. Recommended Curriculum. Figure 10-46 contains a standard curriculum. The CMT manager determines which subjects are applicable to the air carrier's operations and determines the amount of lecture and self-study hours.

D. Briefing Presenters. Inspectors assigned to the CMT with expertise in the covered subject will conduct lecture portions of the Air Carrier-Specific Familiarization Briefings. For those CMT members who provide the Air Carrier-Specific Familiarization Briefings, electronic Learning Management System (eLMS) courses, Communications Skills to Fast-Track Your Career (PD0133_SKILLSOFT), Available Presentation Resources (comm._05_a03_bs_enus), and Presenting Successfully (comm._05_a01_bs_enus) are available to enhance your presentation skills. Contact your Administrative Officer (AO) if you need assistance enrolling in any of these courses.

E. Assessment. An open-book, oral, or written quiz determines satisfactory completion of the briefings.

F. Recordkeeping. Each CMT will maintain a copy of its Air Carrier-Specific Familiarization Briefing outline and any self-study materials. The CMT documents successful

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completion of the initial Air Carrier-Specific Familiarization Briefing (eLMS course number 21000001) for each CMT member.

G. Funding. Each CMT is responsible for the costs associated with completing the Air Carrier-Specific Familiarization Briefings.

10-146 OTHER TRAINING.

A. Operations Inspector Initial Training. All CMT Operations inspectors are programmed to receive initial training and a type rating in an aircraft type operated by their assigned air carrier, unless an inspector already holds a type rating for an aircraft type operated by their currently assigned air carrier. CMT Operations inspectors may be programmed to receive recurrent training as required by their assigned responsibilities. CMT Operations inspectors may perform data collection activities if they are programmed for the training.

B. Airworthiness Inspector Initial Training. All CMT Airworthiness inspectors are programmed to receive initial systems training appropriate to their avionics or maintenance specialty in an aircraft type operated by their assigned air carrier. CMT Airworthiness inspectors may perform data collection activities if they are programmed for the training.

NOTE: The provisions of subparagraph 10-146A or B apply to DEPMs only if they are assigned data collection activities.

C. ASIs Not Assigned to a CMT. The following are requirements to conduct ATOS random inspections:

1) Substituting Earlier ATOS Training. ASIs may not substitute earlier ATOS training.

2) Qualifications. Operations and Airworthiness inspectors not assigned to an ATOS CMT must have qualifications on an aircraft used in part 121 operations, but do not need qualifications on the inspected aircraft.

3) Air Carrier-Specific Familiarization Briefing. ASIs who have not received Air Carrier-Specific Familiarization Briefing on the inspected air carrier should limit their observations to generic regulatory compliance issues.

D. Briefing on the CPD. Inspectors assigned to a CPT receive briefings on the CPD (see Volume 10, Chapter 6, Section 2, Certification Process Document).

E. ORA Training. ORAs receive the following training, as required: indoctrination, Safety Performance Analysis System (SPAS), ATOS baseline training, and training for data-rich carrier programs as needed (e.g., Advanced Qualification Program (AQP), Aviation Safety/Accident Prevention (ASAP), and Maintenance Reliability).

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10-147 ASSIGN INDIVIDUAL AND ALLOCATE FUNDING. When the appropriate resource is available based on staffing, training, and funding, the FLM assigns the inspector to the appropriate work assignment and allocates funding. (See flowchart process step 3.2.)

A. Resource Management by FLM. The FLM assigns and utilizes resources in accordance with the prioritization identified by the PI or CPM in the CAP. FLMs should also consider relevant certificate factors when making work assignments, particularly when CMTs share resources. Factors to consider when comparing work requests from two or more CMTs include:

- Enplanements and departures,
- Length of time the carrier held the certificate,
- Fleet size, type, and age,
- Utilization rate,
- Route structure (number of stations, number of FAA regions),
- Type of operation (effect on flying public),
- Number of approved programs (complexity),
- Maintenance contracts,
- Training contracts,
- Crew domiciles,
- Multiple certificate management responsibilities of principals, and
- Wet and dry lease.

B. Other Considerations for Assigning Work to CMT or CPT Inspectors.

1) CAP. The CAP is the only part 121 assessment work program assigned. It is an option to assign work to inspectors according to Volume 11, Chapter 11, Section 1, Flight Standards Geographic Program, in addition to data collection activities for the assigned CMTs. (Refer to the current edition of FAA Order 1800.56, National Flight Standards Work Program Guidelines.)

2) FLM. The FLM can redirect work assignments from one CMT or CPT member to another.

10-148 ASSIGNMENTS FOR DA OR PA.

A. PI Instructions. PIs should provide detailed instructions to assist the manager or FLM in identifying appropriate individuals to assign to SAIs, EPIs, and ConDORs. The manager or FLM should consider inspector training, experience, qualifications, geographic location, availability, and workload.

B. DCT-Specific Instructions. Some DCTs may contain specific instructions for additional training, experience, or qualifications that may be helpful in determining inspector assignments. Specific instructions may also include additional references, background information, manuals, or other system document that should be reviewed, as well as suggestions for specific types of activities and/or reporting instructions.

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C. Inspector Assignments Can Be Changed Anytime. Assignment changes may include switching from unassigned to assigned or vice versa, and reassigning an assessment from one inspector to another. It is permissible to change inspector assignments for EPIs or SAIs even if work has already begun. Copy work completed prior to changes to prevent the loss of data. The FLM should contact the Help Desk for assistance and a ticket number for tracking.

10-149 CONSIDERATIONS SPECIFIC TO ASSIGNING AN SAI. The FLM assigns SAI team coordinators (TC) and SAI team members. The FLM may assign an SAI to a single inspector. In that case, the inspector is also the TC. To help the FLM identify appropriate individuals to assign to SAI teams, PIs or CPMs should provide detailed instructions. The FLM should consider inspector training, experience, qualifications, geographic location, availability, and workload.

A. The SAI TC. The SAI TC organizes and coordinates SAI team activities. The TC ensures that activities, such as air carrier personnel interviews, are not redundant and that team members complete all activities to accurately answer the questions on the SAI. The TC is a leadership role that should be assigned to an experienced inspector with a solid knowledge of the air carrier. The TC should have a base location near where most SAI activities will take place.

B. SAI Team Members. Inspectors who have varied backgrounds and experience, and are from different geographic locations can comprise a team. SAI teams should always contain inspectors with a sufficient knowledge base to assess the element accurately. The inspector(s) designated to complete the SAI should be appropriately trained and knowledgeable on subjects related to the element.

10-150 DOCUMENT REASONS WHY WORK WAS NOT ASSIGNED. The FLM assigns work based on the CAP priorities for a given quarter until no resources remain. If appropriate resources are not available to complete the entire CAP, the FLM documents why he or she did not assign the remaining work. This ensures that work that remains unassigned is documented for evaluation in a future planning cycle. (See flowchart process step 3.3.)

10-151 NOTIFY THE PI OR CPM THAT WORK REMAINS UNASSIGNED. The FLM notifies the PI or CPM of any work that remains unassigned. (See flowchart process step 3.4.)

10-152 REVIEW THE CAP. After developing the CAP, document the data collection requirements using detailed work instructions. Assign or identify as unassigned all of the data collection activities. The CMT or CPT manager will then review the plan.
(See flowchart process step 3.5.)

A. Justification of Risk Priority. The review ensures that the CAP is risk-based, and that priorities form the basis for work assignments. The CMT or CPT manager will review the CAP to ensure the elements are prioritized according to risk, or proper justification has been entered for elements not prioritized according to risk.

B. Adjust the Plan. A CMT or CPT manager that does not concur with the oversight requirements, priorities, or resource decisions should discuss the issue with the PI and the FLMs.

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The PI may adjust the plan as necessary. The PI can enter a comment in the plan that explains the reason for an adjustment.

10-153 ONGOING RESOURCE MANAGEMENT. Resource management is a continual task for the CMT or CPT. FLMs should continue to evaluate resources for work plans, and consider the needs of special data collection and assessment activities, such as ConDORs and Risk Management Processes (RMP).

10-154 INCOMPLETE WORK RESULTING FROM AN INSPECTOR LEAVING THE CMT OR CPT, OR BEING UNAVAILABLE TO FINALIZE HIS/HER WORK. The FLM will ensure that before an inspector leaves the CMT or CPT, he or she will finalize all work in progress. If the inspector is unavailable to complete the work in progress, the FLM finalizes the records, reassigns the work, or initiates the removal process for an incomplete record.

Figure 10-46. Air Carrier-Specific Familiarization Briefing Outline of Subjects

General Topics—All Specialties (Recommended Minimum Hours—8)	
1. OVERVIEW OF AIR CARRIER. a. Brief History. (1) Mergers. (2) Acquisitions. (3) Financial status (i.e., bankruptcies). (4) Compliance attitude. (5) Corporate headquarters location. (6) Main base location. (7) Corporate philosophy. b. Air Carrier Demographics. (1) Key personnel (names/phone numbers). (2) Organization chart. (3) Major programs. (4) Location of hubs. (5) Location of training bases. (6) Location of maintenance facilities. (7) Personnel strengths. (8) Agent for service. (9) Communications. (10) Special operations. (11) Fleet demographics. (12) Aircraft numbering system. c. Areas of Operations. (1) Type/fleet type of activity. (2) Concentrations of activity.	b. Policies and Procedures for Certificate Management Team (CMT) Responsibility for Coverage of Incidents and Occurrences. c. Individual Interests/Specialties Type ratings, areas of interest, background and experience. d. Communications. (1) Types of information to be requested directly from air carrier (points of contact). (2) Information available from the CMT. (3) Points of contact and protocol. **3. BACKGROUND OF COMPREHENSIVE ASSESSMENT PLAN (CAP).** a. Special Emphasis Areas. (1) Results of Air Carrier Assessment Tool (ACAT). (2) New and pending issues. **4. COMPANY MANUALS.** a. Overview of Air Carrier Manual System. (1) Manual numbering. (2) Master listing of all parts of the air carrier's manual. (3) Where to find the master listing. (4) Where certain manuals are located.

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d. Code Sharing/Wet Lease/Interchange. (1) Airline participants. (2) Foreign Flight Attendants (F/A). e. Future Plans of the Air Carrier.	b. Types and Identification of Manuals. (1) Hard copies. (2) Computerized manuals; CD-ROM. c. Location of Manuals. (1) Required on aircraft. (2) Required software, if applicable. (3) Required for crewmembers. (4) Microfiche reader. (5) Required at stations.
2. CERTIFICATE MANAGEMENT TEAM a. Key Personnel. (1) Listing (name and phone number of all). (2) Principal inspectors (PI) (including regional hazardous materials (hazmat) branch managers).	

Figure 10-46. Air Carrier-Specific Familiarization Briefing Outline of Subjects (Continued)

General Topics—All Specialties (continued) (Recommended Minimum Hours—8)	
d. Distribution and Revision. (1) Determining current revision status. (2) Use of computer, if applicable. (3) What method is used to issue revisions? (4) Tracking responsibilities. e. Alerts and Bulletins. (1) Method to determine current status. (2) Transmission of bulletins and revisions.	b. Quick Reference Handbook Location and Use. c. Safety Briefing. d. Crew Briefing; Communication. e. Required Paperwork/Documentation. (1) Location of logbooks (flight deck/cabin). (2) Location of minimum equipment list (MEL). (3) Airworthiness release. (4) Placards. f. Unique Fleet/Air Carrier Procedures. g. Aircraft Communications Addressing and Reporting System (ACARS). (1) Weight and Balance (W&B). (2) Release amendments. (3) Communications.
5. SECURITY AND ACCESS. a. Access to Ramp and Facilities. (1) Site-specific requirements. (2) Air carrier's security coordinators. b. ID Badges. c. Cockpit Keys. d. Security Alerts for Travel Advisories.	
6. HAZARDOUS MATERIALS. a. Acceptable Shipments. b. Documentation. c. Location Verification. d. Company Material (COMAT).	**9. CABIN PROCEDURES.** a. Exit Seating. b. Emergency Equipment. (1) Location. (2) Preflight, if applicable, for F/As. c. Markings and Placards.
7. EN ROUTE PROCEDURES. a. Jumpseat Authorization and Procedures.	

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(1) Jumpseat operation. (2) Radio operation; headset location and use. b. Requirement for International Travel. (1) Country clearance forms (passport and visa). **8. FLIGHT DECK PROCEDURES.** a. Checklist Location and Use. (1) Flight Deck flows.	d. Carry-On Baggage. e. Special Procedures. f. Medical Emergencies. (1) Medical oxygen. (2) Medlink. (3) AED (defibrillators). g. Couriers. h. Cargo/Animal Handlers. i. Cockpit/Cabin Communications. j. Carriage of Weapons. (1) Forms and procedures.

Figure 10-46. Air Carrier-Specific Familiarization Briefing Outline of Subjects (Continued)

Specific Topics—All Specialties (Recommended Minimum Hours—8)	
1. AIR CARRIER PROGRAMS. a. Deicing. (1) General procedures and training. (2) Paperwork. b. Fueling. (1) General procedures and training. (2) Paperwork. (3) Passenger handling during fueling. (4) Bonding and grounding. c. Pushback/Powerback Procedures. d. International Procedures. (1) Crew check-in time. (2) Crew complement. (3) Flight/duty and rest computation. (4) General declaration. (5) Passport and visa requirements. e. Special and Ferry Flight Procedures. f. Cargo Operations. g. Security. (1) Hijack procedures. (2) Interference with crewmembers.	**4. OPERATIONS SPECIFICATIONS.** a. Exemptions and Deviations. b. Special Areas of Operations. c. Special Authorizations and Programs. (1) Powerback procedures. (2) Single-engine taxi. (3) Extended Operations (ETOPS). (4) Areas of magnetic unreliability (AMU). (5) Lower Landing Minimums. (6) Minimum Navigation Performance Standards (MNPS). (7) Flight Operations Quality Assurance (FOQA). (8) Aviation Safety Action Program (ASAP). (9) Reduced vertical separation minimums (RVSM). (10) Category III Approach (CAT III) procedures.

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2. RECORDS AND REPORTING. a. General. (1) Format: paper, microfiche, electronic. (2) Electronic signatures. (3) Security issues. (4) Custody and retention.	

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Figure 10-46. Air Carrier-Specific Familiarization Briefing Outline of Subjects (Continued)

Specific Topics—All Specialties (continued) (Recommended Minimum Hours—8)	
3. STATION FACILITIES. a. Manuals. b. Fueling Equipment and Facilities. c. Maintenance Support. d. Contract Services. e. Passenger and Baggage Screening. f. Cargo. g. Marshalling and Ground Handling.	

RESERVED. Paragraphs 10-155 through 10-170.

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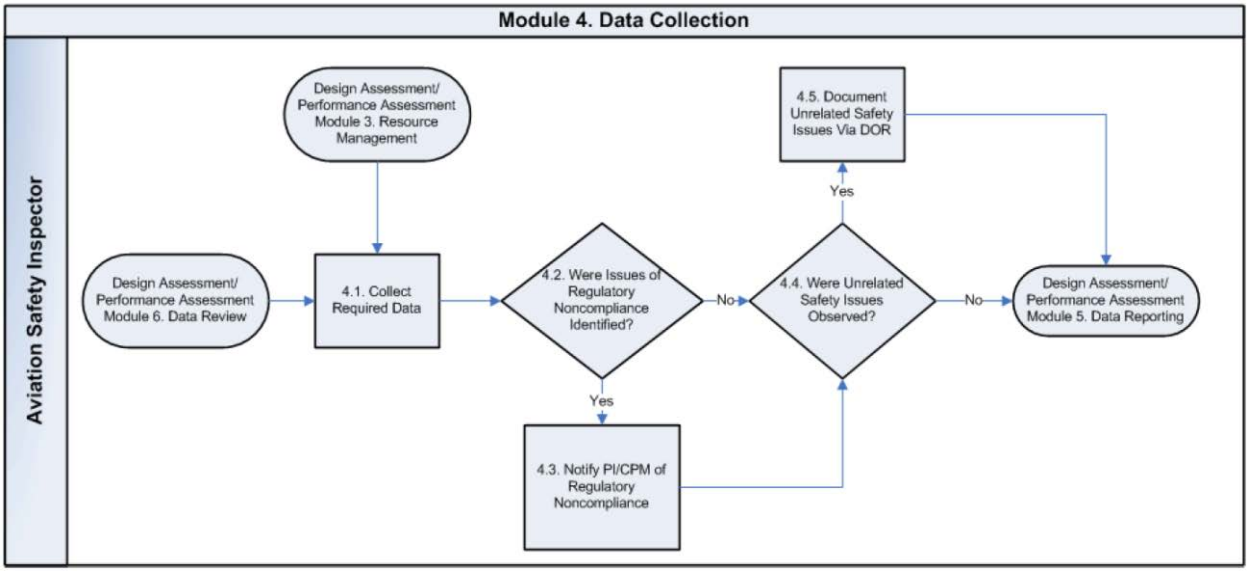
VOLUME 10 AIR TRANSPORTATION OVERSIGHT SYSTEM

CHAPTER 2 PROCEDURES FOR DESIGN AND PERFORMANCE ASSESSMENT

Section 4 Design Assessment Data Collection

Figure 10-48. Module 4: Data Collection



10-171 INTRODUCTION. The objective of this process module is to collect design data in accordance with the Comprehensive Assessment Plan (CAP) and principal inspector (PI) or certification project manager (CPM) instructions. Data collected on the Safety Attribute Inspection (SAI) Data Collection Tool (DCT) and/or the Constructed Dynamic Observation Report (ConDOR) is used to assess air carrier or applicant system design.

10-172 COLLECT REQUIRED DATA. Trained and qualified Federal Aviation Administration (FAA) Operations, Airworthiness, Cabin Safety, and/or Aircraft Dispatcher safety inspectors assigned to an Air Transportation Oversight System (ATOS) Certificate Management Team (CMT) or Certification Project Team (CPT) use SAI DCTs to collect Design Assessment (DA) data. A team of inspectors or a single inspector may complete the SAI. PIs should consider the nature and complexity of the element under scrutiny, and consider whether the single-inspector method is appropriate in each case. Each SAI receives a team coordinator (TC). (See flowchart process step 4.1.)

A. DAs Conducted in Partnership With the Air Carrier. The air carrier may collaborate with the FAA to complete the DA. When collaborating on the assessment, air carrier personnel are active participants and working members of the SAI team, and determine and resolve element evaluation issues with the PI.

1) When an air carrier actively participates as a working member of the evaluation team, the provisions of the current edition of Advisory Circular (AC) 00-58, Voluntary

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Disclosure Reporting Program, govern apparent violations of FAA regulations discovered during the assessment and subsequent enforcement action.

2) When an air carrier elects to not actively participate in the assessment as a working member of the SAI team, the provisions and protections contained in AC 00-58 do not apply to apparent violations of FAA regulations discovered during the specified evaluation period.

B. Coordinate SAI Team and Establish Communication Methods. The SAI TC decides how the team communicates. Coordination and communication are especially important if members are spread among different locations. After reviewing the PI instructions, the TC organizes a team meeting. This meeting can be in person, over the phone, or by other means.

C. Distribute and Schedule Tasks. Either a team of inspectors or a single inspector collects the data. Distribute tasks by element, safety attribute, individual question, or some combination to allow the timely collection of accurate data. The TC also ensures that activities, such as the operator's personnel interviews, are not redundant and that all activities are complete and accurately answers the questions on the SAI. The TC distributes tasks among the SAI team and develops a timeline to complete the assigned data collection activities. The TC, in conjunction with the remaining SAI team members, divides and distributes the SAI activities, but is not the supervisor. If the TC encounters difficulties with a team member during an assessment, the situation becomes elevated through his or her Front Line Manager (FLM) for resolution.

D. Prepare to Perform Assigned Data Collection Activities. Inspectors prepare for DA data collection by reviewing, at a minimum, the following:

1) PI or CPM instructions.

2) Current SAI DCTs, available online, for the applicable element.

3) Specific regulatory requirements (SRR) related to the element.

4) Relevant FAA guidance, such as orders and ACs.

5) Air carrier or applicant policies and procedures (e.g., manuals, operations specifications (OpSpecs), training programs) for the applicable element.

6) The results of previous DAs and Performance Assessments (PA).

E. Perform Data Collection Using the SAI. Each SAI team member submits their responses into ATOS automation after they complete their data collection activities. Communication between team members is essential, but sharing answers is not necessary or desirable because of possible duplication. Inspectors should complete SAIs within the timeframes the PI or CPM establishes so that data are available for timely completion of the DA. Inspectors follow the general instructions for using SAI DCTs.

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NOTE: Some elements are interrelated with associated inspector specialties (Operations, Airworthiness—e.g., 2.1.1, 5.1.9). In instances like this, both specialties should work those SAIs concurrently.

F. SAI DCT Sections. SAIs have seven sections: Element Summary Information, Supplemental Information, Procedures Attribute, Controls Attribute, Process Measurement Attribute, Interfaces Attribute, and Management Responsibility and Authority Attribute.

NOTE: Any aviation safety inspector (ASI) who is conducting an SAI or Element Performance Inspection (EPI) must first access the ATOS Temporary Revisions to determine if a Temporary Revision is applicable to the DCT. Temporary Revisions are found in Flight Standards Information Management System (FSIMS) Publications and can be accessed via a link under the ATOS "News and Documentation" page.

1) Element Summary Information: Scope of Element. Scope of element is a consideration of the air carrier's responsibility and the FAA's responsibility.

a) Purpose. All elements represent processes the air carrier performs. The purpose statement defines the intent of the element and the scope of the certificate holder's responsibility. Policies and procedures describe a certificate holder's process. The safety attributes in each SAI help organize the content of the SAI and aid the PI in determining the acceptability or approvability of the air carrier's process.

b) Objective. The objective tells the ASI the scope of element in general terms and identifies the FAA's responsibility.

c) Specific Instructions. Some DCTs may contain specific instructions for additional training, experience, or qualifications that may be helpful in determining inspector assignments. Specific instructions may also include additional references, background information, or manuals to review, as well as suggestions for specific types of activities and/or reporting instructions.

2) Supplemental Information.

a) Regulatory Requirements. Each SAI includes regulatory requirements as references for the inspector. The regulatory requirements are displayed by the Code of Federal Regulations (CFR) part and section only.

b) Related CFRs and FAA Policy/Guidance.

1. Related CFRs. This section is intentionally left blank.

2. FAA Policy and Guidance. FAA policy and guidance are included for background information that is necessary to accomplish the inspection. This information may not be mandatory and may not be regulatory. It provides guidance and outlines a method of compliance.

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NOTE: Regulatory and FAA policy/guidance references appear at the question level.

3) SAI Attribute Sections. Each SAI attribute section includes an objective. The following paragraphs describe some of the content in each section of the DCT.

a) Procedures Attribute. The questions in this section of the SAI will help verify that the air carrier documented procedures identify who, what, when, where, and how those procedures are accomplished. These procedures must allow all personnel to perform their duties and responsibilities with a high degree of safety. Written policies, procedures, or instructions and information that are interrelated and located in different manuals must be consistent and ensure the effective coordination of work activities from one person, workgroup, or organization to another to ensure the desired outcome for the process. Many of these questions have SRRs for this process, although the air carrier may have some latitude in implementing others. For this reason, a response of "No" to one of these questions does not necessarily mean that the company is not complying with a regulation, or that any action is necessary.

b) Controls Attribute. The questions in this section of the SAI will help determine if the air carrier designed controls (e.g., checks and restraints) into the processes associated with this element to ensure that it follows policies and procedures to achieve desired results. While most controls are not regulatory, they are an important safety attribute with desirable features that help to reduce unacceptable levels of risk. Each SAI lists a series of controls. Some common types of controls are flags, data system backups, authorized signatures, separation of duties, or a final review. It is important to note that certificate holders must be able to show the effectiveness of their controls. Few of these controls have their basis in SRRs. For this reason, a response of "No" to one of these questions does not necessarily mean that the company is not complying with a regulation or that any action is necessary.

c) Process Measures Attribute. Process measures ensure that the operator uses an internal evaluation function to detect, identify, and eliminate or control hazards and the associated risk. For airworthiness elements, this is a required function of the operator's Continuing Analysis and Surveillance System (CASS) required by Title 14 of the Code of Federal Regulations (14 CFR) part 121, § 121.373. The Director of Safety (DOS) and the quality assurance (QA) department often work together to accomplish this function for the operator. Negative findings could require amendments to the Safety/Internal Evaluation Program (IEP) or CASS audit forms or checklists. In most cases, process measures are nonregulatory. For this reason, a response of "No" to one of these questions, while not a violation, may indicate a hazard with an increased level of risk, which may require additional CMT or CPT action.

d) Interfaces Attribute. Data collected in this section helps the PI determine if the air carrier identifies, documents and manages change between this process and other related processes within the air carrier organization. It is important for the air carrier to identify and document where interactions between processes exists, and to have a method of managing change between these processes. Written policies, procedures, or instructions and information that are interrelated and located in different manuals within the air carrier's manual system must

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be consistent to allow personnel to perform their duties and responsibilities with a high degree of safety.

e) Management Responsibility and Authority Attribute. Data from questions in this section will help determine if there is an identifiable, qualified (when required by a CFR), and knowledgeable person who is responsible for the process, answerable for the quality of the process, and has the authority to establish and modify the process. Often, many organizations disperse authority and responsibility. A person can be an individual, a department, a committee, or a position (such as vice president of flight operations). The intent is to identify the highest level person (at the appropriate level within the organization) who is responsible or has the authority for that particular element of the certificate holder's system.

4) Tasks. Each attribute section of the DCT contains the statement, "The inspector must accomplish the following task(s)." Various activities comprise a single task. The following are typical tasks that an SAI includes:

a) Review the information listed in the "Supplemental Information" section of this DCT. The "Supplemental Information" section of the SAI provides a list of the regulatory requirements and FAA policy and guidance documents that are pertinent to the questions of the DCT for a given element. Regulatory and FAA policy and guidance references also appear at the question level.

b) Review the duties and responsibilities for management and other personnel who accomplish the process associated with this element.

c) Review the documentation of the processes associated with the element. Review the policies, procedures, instructions, and information to understand the controls associated with this element. This usually involves reviewing sections of the appropriate OpSpecs training programs or other documents, as well as the manuals related to the process.

d) Review the interfaces associated with the processes for the element. Some questions in the "Procedures" section contain references to interfaces in the "Related Design" Job Task Item (JTI). The inspector reviews those references to identify the interfaces in the certificate holder's manual.

e) Identify the person who has overall responsibility for the element. The inspector must sufficiently understand the certificate holder's system to know who is responsible for the quality of each process.

f) Identify the person(s) who has overall authority to revise the procedures associated with the element. The inspector must sufficiently understand the certificate holder's system to know who has the authority to establish or modify each process.

g) Review the duties and responsibilities of the person(s) documented in the certificate holder's manual. The inspector must sufficiently understand the certificate holder's system to know the duties and responsibilities of individuals assigned the responsibility for each process or authority to change each process.

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h) Review the appropriate organization chart. The inspector must sufficiently understand the certificate holder's organization to identify who has the authority and responsibility for certain processes. Often, many organizations disperse authority and responsibility. A person can be an individual, a department, a committee, or a position.

5) Questions. Each SAI lists a series of questions for the SAI team to answer based on their review and analysis during various activities. Answer questions on each activity report in response to the reviews and analysis on that single activity. The DCTs are not checklists of questions to ask directly of the certificate holder's personnel.

a) Questions based on regulatory requirements have an SRR appended to them. Therefore, answering "No" to such a question may require an enforcement investigation for a certificated air carrier, or may lead to rejecting a program or authorization proposed by an applicant.

b) Questions that do not have an SRR appended to them are not tied to a literal regulatory requirement, but are based on system safety principles. A "No" answer to this type of question, while not a violation, may indicate a hazard with an increased level of risk that may require additional CMT or CPT action, including a decision to withhold approval or acceptance of a system or program.

c) A "D" or "Domestic," "F" or "Flag," "S" or "Supplemental," or any combination of these identifies each question. These identify the scope of operation and help the inspector determine if the question applies. For instance, if the air carrier is a supplemental air carrier, and there is a "D" or "Domestic" next to the question, this question would not be applicable to a supplemental operation.

NOTE: DCT users are responsible to ensure that they reference the current edition of the guidance.

6) JTIs. JTIs are for inspector reference only. JTIs aid the inspector in determining if a certificate holder's written policies, procedures, instructions, and information are adequate. The FAA does not expect the inspector to respond to each JTI individually. The JTIs listed below each question are there to aid inspectors in answering the question. If a question appears too nonspecific, review the associated JTI to identify the specific requirements. Many JTIs contain FAA policy and guidance referenced within the JTI. Due to automation issues, the policy and guidance reference may only appear in FSIMS copies of the JTIs.

7) Notes. Notes supplement SAI and EPI questions. Notes contain clarifying information to help the ASI better understand the question.

G. Perform Data Collection Using ConDORs. The PI or the CPM may request inspectors to collect DA data using a ConDOR to address focused or unique situations. The ASI performs the appropriate tasks listed on the ConDOR for each inspection to answer accurately all the questions the PI or CPM require.

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10-173 IDENTIFICATION OF REGULATORY NONCOMPLIANCE ISSUES. During data collection activities for DA, the inspector may identify issues of regulatory noncompliance that require an immediate response. (See flowchart process step 4.2.)

A. Interpreting "No" Responses. Not all "No" responses to SAI DCT questions indicate regulatory noncompliance. A "No" answer can also mean inadequate inclusion of the safety attributes in the area under evaluation, or that the certificate holder's approved or accepted procedures are inadequate.

B. Regulatory Basis of a "No" Response. A "No" answer does not necessarily equate to an unsafe condition or a regulatory violation, unless that particular "No" has a regulatory basis (including regulatory intent) and the inspector observed a possible violation or unsafe condition.

10-174 NOTIFY THE PI/CPM OF REGULATORY NONCOMPLIANCE. After identifying an issue of regulatory noncompliance that requires an immediate response, the inspector notifies the PI or CPM. The PI follows the guidance outlined in the current edition of FAA Order 2150.3, FAA Compliance and Enforcement Program, to address the issue. (See flowchart process step 4.3.)

10-175 OBSERVED UNRELATED SAFETY ISSUES. While collecting the required data for the DA, the inspector may observe unrelated safety issues, which are outside the scope of the SAI DCT questions. The inspector takes appropriate action, including communicating the safety issue to air carrier or applicant personnel and the PI or CPM. ATOS does not change an inspector's responsibility to investigate and act on safety or regulatory concerns. (See flowchart process step 4.4.).

A. Address Significant Issues. The inspector should promptly convey to the appropriate PI or CPM significant issues or items of immediate concern.

B. Address Significant Issues Involving Hazardous Materials (Hazmat). The inspector must promptly convey to the appropriate PI or CPM significant issues or items of immediate concern regarding all aspects of the air transportation of hazmats. The PI or CPM will coordinate with the regional hazmat branch manager.

C. Address Significant Issues Involving Drugs or Alcohol. Significant issues or items of immediate concern regarding all aspects of the air carrier's or applicant's drug testing program and alcohol misuse prevention program must be promptly conveyed to the appropriate PI or CPM who then coordinates with the Drug Abatement Division (AAM-800).

10-176 DOCUMENT UNRELATED SAFETY ISSUES VIA A DYNAMIC OBSERVATION REPORT (DOR). Use the DOR to document observations associated with unrelated safety issues found during data collection activities. These observations may involve any part 121 air carrier at any location, at any time. DORs are not a substitute for the planned inspections. Managers and inspectors use the DOR in the following situations (see flowchart process step 4.5.):

- Safety issues unrelated to the ATOS element under assessment;

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- Safety issues for which there is not an applicable ATOS element or DCT question;
- Safety issues for an air carrier to which the inspector is not assigned;
- Specific inspection events as directed by a handbook or other national directives;
- Safety issues observed by CMT members (assigned to that air carrier) during incidental travel from one location to another to perform official business; and
- Safety issues observed while conducting a random inspection if there is not a question to address the safety issue.

RESERVED. Paragraphs 10-177 through 10-190.

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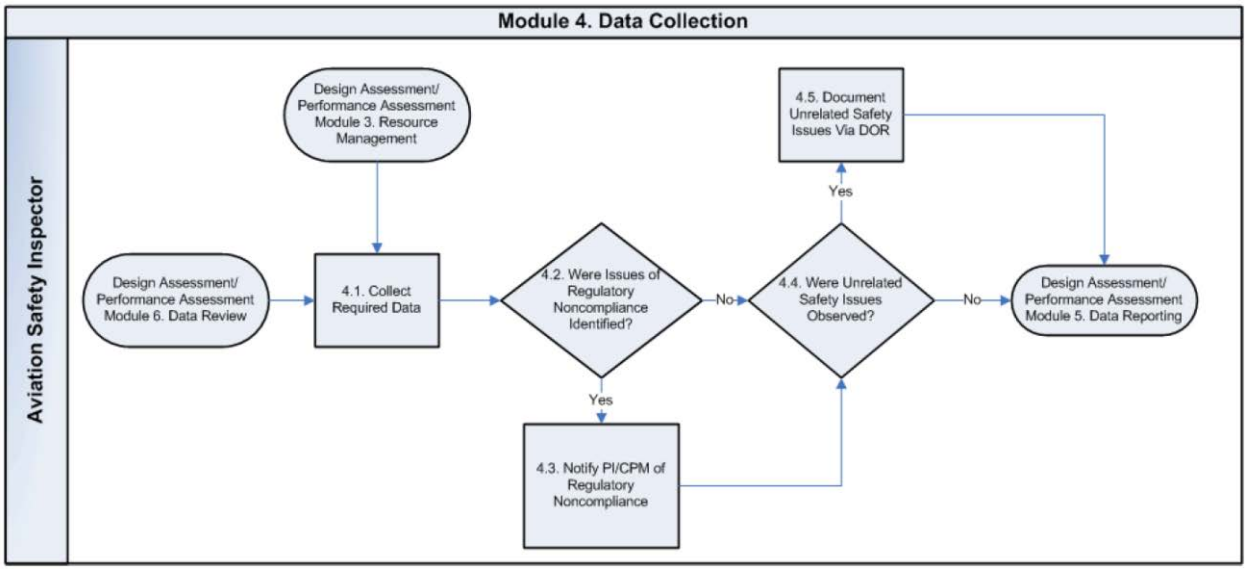
VOLUME 10 AIR TRANSPORTATION OVERSIGHT

CHAPTER 2 PROCEDURES FOR DESIGN AND PERFORMANCE ASSESSMENT

Section 5 Performance Assessment Data Collection

Figure 10-49. Module 4: Data Collection



10-191 INTRODUCTION. The objective of this process module is to collect performance data in accordance with the Comprehensive Assessment Plan (CAP) and principal inspector (PI) or certification project manager (CPM) instructions. Data collected on the Element Performance Inspection (EPI) and/or the Constructed Dynamic Observation Report (ConDOR) Data Collection Tool (DCT) are used to assess the system performance of an air carrier or applicant.

10-192 COLLECT REQUIRED DATA. Trained and qualified Federal Aviation Administration (FAA) Operations, Airworthiness, Cabin Safety, and/or Aircraft Dispatcher inspectors assigned to an Air Transportation Oversight System (ATOS) Certificate Management Team (CMT) or a Certification Project Team (CPT) collect Performance Assessment (PA) data using EPIs. (See flowchart process step 4.1.)

A. Prepare to Perform Assigned Data Collection Activities. Inspectors prepare for collecting PA data by reviewing, at a minimum, the following:

1) PI or CPM instructions.

2) Current EPI DCTs (available online) for the applicable element under assessment. (Refer to the DCT-specific instructions for additional information requirements.)

3) Specific regulatory requirements (SRR) related to the element.

4) Relevant FAA guidance, such as orders and advisory circulars (AC).

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5) Air carrier or applicant policies and procedures (e.g., manuals, operations specifications (OpSpecs), and training programs) for the element under assessment.

6) The results of previous Design Assessments (DA) and PAs.

B. Perform Data Collection Using the EPI. Inspectors submit their responses to EPI DCT questions into ATOS automation after they complete their data collection activities. Inspectors should complete EPIs within the timeframe established by the PI or CPM so that the data are available to complete the PA on a timely basis.

C. EPI DCT Sections. EPIs have four sections: Element Summary Information, Supplemental Information, Performance Observables, and Management Responsibility and Authority. The objective of the Performance Observable section is to determine if the air carrier or applicant follows its procedures, controls, process measures, and interfaces for the process and to determine if the process is functioning as designed and achieving the desired results. The objective of the Management Responsibility and Authority section is to determine if air carrier management personnel are qualified and knowledgeable, and to recognize their responsibility and/or authority for the process.

NOTE: Aviation safety inspectors (ASI) must review temporary revisions under "News and Documentation" in ATOS. Any ASI who is conducting a Safety Attribute Inspection (SAI) or EPI must first access Flight Standards Information Management System (FSIMS) Publications to determine if a temporary revision is applicable to the DCT. Temporary revisions are found in FSIMS Publications and can be accessed via a link under the ATOS News and Documentation page. The list will identify the temporary revisions published by element number. As a reminder, the Flight Standards National Field Office (AFS-900) will post a broadcast message when it publishes a temporary revision.

1) Element Summary Information.

a) Scope of Element. Scope of element is a consideration of the air carrier's responsibility and the FAA's responsibility.

1. Purpose. All elements represent processes performed by the air carrier. The purpose statement defines the intent of the element and the scope of the certificate holder's responsibility. Policies and procedures describe a certificate holder's process. The design of the questions in each EPI aid the PI in judging the performance of the air carrier's process.

2. Objective. The objective tells us the scope of the inspection in general terms and identifies the FAA's responsibility.

3. Specific Instructions. Some DCTs may contain specific instructions for additional training, experience, or qualifications that may be helpful in determining inspector assignments. Specific instructions may also include additional references, background information, data sources, or manuals to review, as well as suggestions for specific types of activities and/or reporting instructions.

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b) Related EPIs. Intentionally left blank.

2) Supplemental Information.

a) Regulatory Requirements. You will see the Title 14 of the Code of Federal Regulations (14 CFR) part and section of the regulatory requirements.

b) Related Codes of Federal Regulations (CFR) and FAA Policy/Guidance.

1. Related CFRs. Intentionally left blank.

2. FAA Policy and Guidance. Use the FAA policy and guidance for background information that is necessary to accomplish the inspection. It provides guidance and a method of compliance.

NOTE: Regulatory and FAA policy/guidance references appear at the question level.

3) Questions. Each EPI section lists a series of questions for the inspector to answer based on his or her observations during the various activities. The inspector answers the questions on each activity report in response to what he or she observed on that single activity. Based upon the scope of the EPI and the complexity of the certificate holder's process, inspectors should develop a plan of research, observation, inspection, and evaluation that ensures the collection of quality data. A "D" or "Domestic," "F" or "Flag," "S" or "Supplemental," or any combination of these identifies each question. These identify the scope of operation and help the inspector determine if the question applies. For example, if the air carrier is a supplemental air carrier and there is only a "D" or "Domestic" next to the question, this question would not be applicable to a supplemental operation.

4) Job Task Items (JTI). JTIs are for inspector reference only. JTIs aid the inspector in determining if a certificate holder follows its written policies, procedures, instructions, and information, and if the certificate holder achieves the desired results. The FAA does not expect the inspector to respond to each JTI individually. The JTIs aid inspections in answering the question. Many JTIs contain FAA policy and guidance referenced within the JTI. Due to automation issues, the policy and guidance reference may only appear in FSIMS copies of the JTI.

5) Notes. Notes supplement SAI and EPI questions. Notes contain clarifying information to help the ASI better understand the question.

6) Completing the EPI Performance Observables Section. The inspector should complete the tasks identified on the DCT and answer each question in the section at least once.

a) Tasks. Each DCT contains the statement, "The inspector shall accomplish the following tasks." Each task is made up of various activities. The following are typical tasks that an EPI includes:

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1. Review the information listed in the "Supplemental Information" section of this DCT, a list of regulatory requirements, and FAA policy or guidance documents that are pertinent to the questions of the DCT for a given element.

2. Review the policies, procedures, instructions, and information for the element. The inspector reviews and gains an understanding of the certificate holder's policies and procedures for the element they are inspecting to plan inspection activities. This review usually involves sections of the appropriate OpSpecs, manuals, training programs, or other guidance.

3. Review the last accomplished associated SAI for the element. A review of the SAI DCT and the results of any complete SAIs provide the inspector with useful information about the certificate holder's systems, and can help the inspector identify areas of potential risk. The "Controls Attribute" section of each SAI lists required checks and restraints built into the certificate holder's process to help ensure that it achieves the desired results consistently. Most controls are not regulatory, but they are an important safety attribute with desirable features that help to reduce risk. A subsequent question asks the inspector if the certificate holder follows the controls.

4. Observe the performance of the process associated with the element to gain an understanding of the procedures, instructions, and information. Each element defines a specific program or process that achieves certain results as described in the "Purpose" section of the EPI. The inspectors must plan to conduct various activities that will assist them in determining if the air carrier follows the policies and procedures and whether they are effective. For example, in assessing the results of a deicing EPI, the inspector may perform various activities at different locations. These activities may include inspecting the storage of deicing materials at station facilities, observing deicing in progress on various aircraft from the ramp, watching deicing procedures during cockpit or cabin en route inspections, or visiting the operations center during icing conditions.

5. Discuss the processes associated with the element with the personnel who perform the duties and have responsibilities required by the process.

b) Questions. The following subparagraphs describe typical questions in the "Performance Observables" section of the EPI.

1. Did the operator follow policies and procedures, instructions, and information for the element? The inspector must gain a thorough understanding of the certificate holder's policies and procedures to answer this question.

2. Did the operator follow controls for the element? This question refers to the controls identified in the associated SAI controls attributes section. Controls are checks and restraints the certificate holder must build into its process to help ensure that it consistently achieves the desired results (purpose of the element). Reviewing those controls helps the inspector answer this question. Inspectors do not observe all the controls during each activity.

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3. Did the records for the element comply with the instructions? The inspector must sufficiently understand the air carrier's system to know which records and reports it generates or uses during the processes and procedures for the element. Inspectors should review and assess a representative sample of the records for compliance with regulations and the certificate holder's policies, procedures, instructions, and information.

4. Were the process measures for the element effective in identifying actual or potential problems; and did the operator identify and take corrective action for identified problems? The inspector reviews the "Process Measures" section of the SAI and certificate holder's manuals to understand which measures the certificate holder has designed into the process. The inspector conducts activities to determine if the process measurements were effective in identifying and providing corrective action for problems or potential problems.

5. Did the operator follow its method for evaluating the impact of changes in this process on other related processes that interface with this process? This question focuses on the interactions between the process under inspection and other related processes within the air carrier's organization.

6. Did the observed interactions between personnel accomplishing interfacing processes produce the desired result? This question focuses on the interactions within the process and between people.

7) Completing the Management Responsibility and Authority Section. This section helps determine if there is a qualified and knowledgeable person who is responsible for the process, answerable for the quality of the process, and has the authority to establish and modify the process.

a) Tasks. The following are typical tasks that this section includes.

1. Reviewing Duties and Responsibilities. Review the duties and responsibilities for person(s) who manage the processes associated with the element.

a. Identify the person who has overall responsibility for the processes associated with the element. The intent is to identify the highest level person within the organization who is responsible for the quality of the process. That person may or may not have authority to change the process.

b. Identify the person who has overall authority for the processes associated with the element. The intent is to identify the highest level person within the organization who has authority to change the process. That person may or may not be responsible for the quality of the process.

NOTE: A person can be an individual, department, committee, or position.

c. Discuss the processes associated with the element with the management personnel identified in tasks *1*a) and *1*b) above. In completing this task, the

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inspector has discussions with the persons who have the responsibility and authority to determine if they understand the policies and procedures for the process.

d. Review the qualifications and work experience of the management personnel identified in tasks *1*a) and *1*b) above. The purpose of this task is to determine that the individual responsible for, or with the authority to establish or modify a process, meets the qualifications to hold that position. In some instances, there may be regulatory requirements for those qualifications. In other instances, the air carrier may demonstrate the qualifications by reviewing the individual's FAA certificate, training records, or particular background or expertise.

b) Questions. The following subparagraphs describe typical questions in the management responsibility and authority section of the EPI.

1. Questions 1–2. The purpose of these questions is to ensure that the identified person(s) responsible for the quality of the processes and the person(s) who has the authority to establish and modify the processes for the element is actively filling those positions. With no major changes in key personnel or the process since an inspector accomplished the last SAI or EPI, then only answer questions 1 and 2 and select "No Change (N/C)" for the remaining questions.

2. Questions 3–10. Answer these questions if there are changes in personnel or the program that affect the responsibility and authority attributes for the process. If there have not been changes in personnel or the program that affect the responsibility and/or authority attributes, reporting inspectors can mark these questions "No Change."

10-193 PERFORM DATA COLLECTION USING CONDORS. The PI or the CPM may direct inspectors to collect PA data using a ConDOR to address focused or unique situations. The ASI performs the appropriate tasks listed on the ConDOR for each inspection to accurately answer all the questions required by the PI or CPM.

10-194 WERE ISSUES OF REGULATORY NONCOMPLIANCE IDENTIFIED? During data collection activities for a PA, the inspector may identify issues of regulatory noncompliance that require an immediate response. Not all "No" responses to EPI DCT questions indicate regulatory noncompliance. (See flowchart process step 4.2.)

10-195 NOTIFY PI OR CPM OF REGULATORY NONCOMPLIANCE. After identifying an issue of regulatory noncompliance that requires an immediate response, the inspector notifies the PI or CPM. The PI follows the guidance outlined in the current edition of FAA Order 2150.3, FAA Compliance and Enforcement Program, to address the issue. (See flowchart process step 4.3.)

10-196 WERE UNRELATED SAFETY ISSUES OBSERVED? While collecting the required data for the PA, the inspector may observe unrelated safety issues that are outside the scope of the EPI DCT questions. The inspector takes the appropriate action, including communicating the safety issue to air carrier or applicant personnel and the PI or CPM.

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ATOS does not change an inspector's responsibility to investigate and act on safety or regulatory concerns. (See flowchart process step 4.4.)

A. Address Significant Issues. Promptly notify the appropriate PI or CPM of significant issues or items of immediate concern.

B. Address Significant Issues Involving Hazardous Materials (Hazmat). The inspector must promptly convey to the appropriate PI or CPM significant issues or items of immediate concern regarding all aspects of the air transportation of hazmats. The PI or CPM will coordinate with the regional hazmat branch manager.

C. Address Significant Issues Involving Drugs or Alcohol. The inspector must promptly convey to the appropriate PI or CPM significant issues or items of immediate concern regarding all aspects of the air carrier's or applicant's Drug Testing Program and Alcohol Misuse Prevention Program. The PI or CPM will coordinate with the Drug Abatement Division (AAM-800).

10-197 DOCUMENT UNRELATED SAFETY ISSUES VIA A DYNAMIC OBSERVATION REPORT (DOR). Use the DOR to document observations associated with unrelated safety issues found during data collection activities. (See flowchart process step 4.5.) These observations may involve any 14 CFR part 121 air carrier at any location, at any time. DORs are not a substitute for the planned inspections. Managers and inspectors use the DOR in the following situations:

- Safety issues unrelated to the ATOS element under assessment;
- Safety issues for which there is not an applicable ATOS element or DCT question;
- Safety issues for an air carrier to which the inspector is not assigned;
- Specific inspection events as directed by a handbook bulletin or national directive;
- Safety issues observed by CMT members (assigned to that air carrier) during incidental travel from one location to another to perform official business; and
- Issues observed while conducting a random inspection, if the random inspection does not include a question that addresses the nature of the issue.

RESERVED. Paragraphs 10-198 through 10-212.

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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 6 Part 129 Part D Operations Specifications—Aircraft Maintenance

12-269 PART D OPERATIONS SPECIFICATIONS (OPSPECS)—AIRCRAFT MAINTENANCE. The Federal Aviation Administration (FAA) issues Part D OpSpecs to foreign air carriers who conduct operations within the United States under Title 14 of the Code of Federal Regulations (14 CFR) part 129 using U.S.-registered aircraft. The FAA also issues Part D OpSpecs to foreign persons and operators using U.S.-registered aircraft operated in common carriage solely outside the United States in accordance with part 129, § 129.1(b). This chapter contains additional information specific to these types of operations. The FAA does not issue Part D OpSpecs to part 129 foreign air carriers who conduct operations with only foreign-registered aircraft. The following guidance gives general instructions on how to complete Part D OpSpecs. Detailed instructions on the procedures for approving a maintenance program and minimum equipment list (MEL) under § 129.14 are contained in Volume 12, Chapter 3, Section 2 and Volume 4, Chapter 4, Section 1.

OPSPEC D070 and D072. DECOMMISSIONED.

OPSPEC D085, U.S.-REGISTERED AIRCRAFT LISTING AND MAINTENANCE REQUIREMENTS (required for all air carriers and 14 CFR part 129, § 129.14 operators conducting operations with U.S.-registered aircraft). OpSpec D085 identifies the maintenance program that the FAA has reviewed and approved for any U.S.-registered aircraft, as required by § 129.14. After the principal maintenance inspector (PMI) has evaluated the maintenance program that the foreign air carrier or foreign person has submitted in accordance with Volume 12, Chapter 3, Section 2, and the current edition of Advisory Circular (AC) 129-4, Maintenance Programs for U.S.-Registered Aircraft Operated Under 14 CFR Part 129, the PMI will need to issue OpSpec D085 as follows:

A. Make, Model, and Series (M/M/S), Aircraft Registration Number, and Aircraft Serial Number. All aircraft information must be first entered into the Web-based Operations Safety System (WebOPSS) in the left navigation area, under “CHDO,” then “Maintain Operator Data,” and then “Aircraft.” Aircraft used to operate solely outside the United States identify as “129.14”. Aircraft flying into the United States identify as “129”. Once the “Aircraft” data is entered, when the PMI or operator moves a new OpSpec D085 template to the workspace, the aircraft-specific information (M/M/S, aircraft registration number, and aircraft serial number) for the foreign air carrier’s or foreign person’s U.S.-registered aircraft will be auto-filled into the table(s).

NOTE: In the D085 template that is issued to foreign air carriers that operate to the United States, there is an additional column in the table that identifies if the aircraft is being used to operate to or solely outside the United States. (Aircraft

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that are used to fly to the United States are identified as “129”, and aircraft that are used to fly solely outside the United States are identified as “129.14”.)

B. Maintenance Program Document Information. Maintenance program document name, and document revision date and number. Enter the information manually into the appropriate table.

NOTE: For dry-leased aircraft, refer to additional guidance in Volume 12, Chapter 2, Section 9 and § 129.14(b).

OPSPEC D092—MAINTENANCE PROGRAM APPROVAL FOR U.S.-REGISTERED AIRPLANES USED FOR OPERATIONS IN DESIGNATED REDUCED VERTICAL SEPARATION MINIMUM AIRSPACE. (OPTIONAL.) (Required for all foreign air carriers conducting Reduced Vertical Separation Minimum (RVSM) operations with U.S.-registered aircraft.) OpSpec D092 is used to identify the RVSM maintenance program that the FAA has reviewed and approved for any U.S.-registered aircraft as required by 14 CFR part 129, § 129.14. After the principal maintenance inspector (PMI) has evaluated the program submitted by the operator in accordance with this order and the current edition of AC 91-85, Authorization of Aircraft and Operations for Flight in Reduced Vertical Separation Minimum Airspace, the PMI will need to issue OpSpec D092. OpSpec D092 must be issued in conjunction with OpSpecs A008 and B046. Before issuing OpSpec D092, the PMI and principal avionics inspector (PAI) must review RVSM authorization guidance for OpSpec B046 and coordinate the issuance with the principal operations inspector (POI). Inspectors should complete OpSpec D092 as follows:

A. Make, Model, and Series (M/M/S), Aircraft Registration Number, and Aircraft Serial Number. When entering an authorized M/M/S into OpSpec D092, it should be selected from the air carrier’s/operator’s aircraft authorization listing in the automated Operations Safety System (OPSS). On the “Select Data” screen, “Tables” tab, click on “Load Data.” The aircraft-specific information (M/M/S, aircraft registration number, aircraft serial number) for the air carrier’s/operator’s U.S.-registered aircraft will be auto-filled into the table.

B. Non-RVSM Aircraft. Manually delete individual aircraft that are not RVSM compliant from the listing in the table.

C. Maintenance Program Document Name, Revision Date and Number, and Expiration Date. On the “Select Data” screen, “Tables” tab, enter the RVSM maintenance program approval document(s)’s name(s) and enter the program expiration date, if applicable.

OPSPEC D095—MINIMUM EQUIPMENT LIST AUTHORIZATION—U.S.-REGISTERED AIRCRAFT (OPTIONAL). (Required for U.S.-registered airplanes if the carrier/operator is authorized to use a MEL.)

A. General. The regulatory basis for a MEL is 14 CFR part 129, § 129.14. Without the MEL, the foreign air carrier or foreign person operating a U.S.-registered aircraft would have to operate the aircraft with all instruments and equipment operative. For MEL exceptions, see Volume 12, Chapter 2, Section 3, OpSpec A003.

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B. Approval. When seeking approval of an MEL, the foreign air carrier or foreign person must show that the procedures in its maintenance program are adequate to support the use of its MEL. MELs are approved for U.S.–registered aircraft through FAA OpSpecs. Section 129.14 (b)(4) states in part that the OpSpec permitting the use of the MEL is carried on board (refer to § 129.14 (b)(4)).

1) The carriage on board of the MEL is not limited to hard copies. The intent of § 129.14 (b)(4) is that the current and approved MEL is accessible to the flightcrew. For example, if a foreign air carrier or a foreign person is approved by their State of the Operator to carry the MEL electronically, this is an acceptable means of compliance with § 129.14.

2) An inspector conducting a ramp inspection must be able to verify that the MEL is available, approved, and up-to-date. (Refer to International Civil Aviation Organization (ICAO) Doc 8335, and see Volume 12, Chapter 3, Section 3, Figure 12-18).

C. Principal Inspectors' (PI) Evaluation. After the principal operations inspector (POI) has evaluated the operator-submitted program and coordinated with the principal maintenance inspector (PMI) and/or principal avionics inspector (PAI) in accordance with Volume 4, Chapter 4 and Volume 12, Chapter 3, Section 2, the PIs will need to issue OpSpec D095. The aircraft make, model, and series (M/M/S), Aircraft Registration Number, Serial Number, Master Minimum Equipment List (MMEL), Revision Date and Number, and MEL Revision Date and Number for aircraft authorized for the use of an MEL must be listed in the OpSpec table.

OPSPEC D097—AGING AIRCRAFT PROGRAMS. For aging aircraft programs for 14 CFR part 129 that include approval sections for each of the aging aircraft CFRs. OpSpec/Management Specification (MSpec)/LOA D097 is the means by which the principal inspector (PI) will approve the operator's incorporation of the applicable aging aircraft regulations, as well as any revisions that he or she needs to incorporate into the Continuous Airworthiness Maintenance Program (CAMP). It allows the PI to select the applicable CFR and accomplish individual approvals for each, including the approval date. The PI should select the regulatory references applicable to the operator and insert the approval dates into the operator's CAMP.

NOTE: Table 1 must include the registration number; serial number; aircraft make, model, and series (M/M/S); along with the maintenance document, which incorporates the comprehensive repair assessment program.

A. Fuel Tank System Maintenance Program. When issuing the Fuel Tank System Maintenance Program the PI must ensure that the free text area of the OpSpec/MSpec/LOA is used for the following:

1) To identify and record the document(s)—by document number, revision number, and date—that are used as the source of the FAA Oversight Office-approved electrical wiring interconnection system (EWIS)/fuel tank safety (FTS) instructions for continued airworthiness (ICA).

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2) If this information is contained in the operator's manual system, a reference to that location in their manual system must be recorded in the free text area.

NOTE: The PI must ensure that the operator has procedures in its manual that track any changes and approvals made to the FAA Oversight Office-approved EWIS/FTS ICA.

B. Fuel Tank Flammability Reduction (FTFR) Program. When issuing the FTFR Program the PI must ensure that the free text area of OpSpec/MSpec/LOA is used for the following:

1) To identify and record the document(s)—by document number, revision number, and date—that are used as the source of the FAA Oversight Office-approved FTFR airworthiness limitations (AL).

2) If this information is contained in the operator's manual system, a reference to that location in their manual system must be recorded in the free text area.

NOTE: The PI must ensure that the operator has procedures in its manual that track any changes and approvals made to the FAA Oversight Office-approved FTFR AL.

OPSPEC D301—AIRCRAFT NETWORK SECURITY PROGRAM. Linking OpSpec D301 to Volume 3, Chapter 61.

OPSPEC D485—AGING AIRPLANE INSPECTION AND RECORDS REVIEW (required for all foreign air carriers conducting operations with U.S.-registered airplanes).

A. Purpose. OpSpec D485 is a "data collection" OpSpec, as indicated by the "400" series. OpSpec D485 is optional for 14 CFR part 129 foreign air carriers, and must be issued when U.S.-registered airplanes are used in the air carrier's operation.

1) For all foreign air carriers for which OpSpec D485 is issued, the assigned International Field Office (IFO) or International Field Unit (IFU) must complete OpSpec D485, even if they do not have airplanes that require inspection.

2) The inspection review is applicable to every U.S.-registered, multiengine airplane operated under part 129.

3) If inspection review is not applicable to a particular airplane or to all airplanes for a foreign air carrier, OpSpec D485 still must be activated in the automated Operations Safety System (OPSS) with appropriate language regarding why the inspection review is not applicable (i.e., NA; Below Threshold—NA; Storage—Not Completed; Not Completed; No Multiengine Airplanes).

4) The basic requirement is to inspect each aircraft and its records; however, a sampling of these tasks and records for each airplane along with routine surveillance of a foreign

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carrier's maintenance program will ensure that each airplane and its age-sensitive components are properly maintained.

5) IFOs and IFUs may use the Program Tracking and Reporting Subsystem (PTRS) to report aircraft and records inspections.

6) Volume 6, Chapter 11, Section 14 contains more detailed guidance on conducting records reviews and aircraft inspections mandated by the aging aircraft rules.

B. Procedure. In completing OpSpec D485, select data. The first four columns of the table will be loaded from the foreign air carrier's aircraft authorization airplane information, as stated in the OpSpec. Aircraft registration number, serial number, nose number, and M/M/S data for both OpSpec D085 and OpSpec D485 are loaded into those OpSpecs from aircraft information entered under the "Certificate Holder Menu," "Aircraft Authorization in OPSS."

C. Paragraph Completion Instructions.

NOTE: The following instructions are to be used to complete the required records and airplane inspection in OpSpec D485, Table 1.

NOTE: Remember that *all* cells in the table *must* be filled out before activating the paragraph.

1) Load *all* the multiengine airplanes listed in the foreign air carrier's or foreign person's aircraft authorization inventory into Columns 1, 2, 3, and 4.

2) For each airplane that requires the records review and inspection required by § 129.105, the assigned Flight Standards District Office (FSDO)/IFO will:

a) Enter the date of airplane manufacture as indicated on the airframe data plate or the original airworthiness certificate, whichever is oldest, in Column 5.

b) Enter "Not Completed" in Columns 6, 7, and 8, as applicable, to indicate that the inspection and/or records review has not yet been completed.

c) When the appropriate inspection is complete, insert the month and year of the accomplishment in Columns 6 and 7, as applicable.

d) When both inspections are complete, enter the date (month/year) that the official notification was sent to the certificate holder in Column 8.

3) For each U.S.-registered multiengine airplane for which the foreign carrier or foreign person has provided notification that the airplane is in storage and will not have the required records review and inspection accomplished, the assigned FSDO will:

a) Load the airplanes in Columns 1 through 4 per subparagraph C1).

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b) Enter the date of airplane manufacture as indicated on the airframe data plate or the original airworthiness certificate, whichever is oldest, in Column 5.

c) Select and enter "Storage-Not Completed" in *each* of the following columns: Columns 6, 7, and 8.

4) For each U.S.-registered airplane that has not reached the age where the required records review and inspection must be accomplished, the assigned FAA/IFO will:

a) Load the airplanes in Columns 1 through 4 per subparagraph C1).

b) Enter the date of airplane manufacture as indicated on the airframe data plate or the original airworthiness certificate, whichever is oldest, in Column 5.

c) Select and enter "Below Threshold-N/A" (for not applicable) in *each* of the following columns: Columns 6, 7, and 8.

D. Notification to the Assigned FAA/IFO. Each foreign air carrier or foreign person must notify their assigned FAA/IFO at least 60 days before the date on which the airplane and airplane records will be made available for the inspection and records review.

E. Amending this OpSpec. The assigned FAA/IFO will issue/amend this OpSpec as necessary to each applicable foreign air carrier or foreign person operating U.S.-registered multiengine airplanes under part 129. This OpSpec may be considered valid if completed, signed, and issued by the FAA. It does not require the signature of the operator for it to be valid.

F. Matching Information. Theoretically, the foreign air carrier's aircraft authorization and OpSpec D085 airplanes should be the same; that is, the information entered under the certificate holder drop-down menu under "Aircraft Authorization" is what should be loaded into the OpSpec D085 and OpSpec D485.

NOTE: Make updates to the operator aircraft inventory only in "aircraft authorization" and then load into OpSpecs D085 and D485.

RESERVED. Paragraphs 12-270 through 12-289.

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VOLUME 13 FLIGHT STANDARDS DESIGNEES

CHAPTER 2 AIRCREW DESIGNATED EXAMINER PROGRAM

Section 2 FAA's Management of an Aircrew Designated Examiner Program

13-76 PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) ACTIVITY CODES. Operations: 1590, 1621, 1626, 1642, 1644, 1645.

13-77 OBJECTIVE. This section contains guidance for principal operations inspectors (POI) and aircrew program managers (APM) when managing an Aircrew Designated Examiner (ADE) program. It describes the general structure of the ADE program and the functions of the Federal Aviation Administration (FAA) participants in the program.

13-78 GENERAL. A Flight Standards District Office (FSDO)/certificate management office (CMO) holding a certificate of an air carrier participating in an ADE program may be organized in any one of a variety of ways. Regional Flight Standards division (RFSD) managers structure the management of an ADE program to accommodate local conditions. The following individuals have primary roles in an ADE program:

A. Certificate Manager. The person in a certificate-holding district office (CHDO) with primary responsibility for oversight of an operator is the certificate manager. The certificate manager is responsible for the administration of the operator's certificate. Designation of a certificate manager varies with the structure of the respective office. The CHDO may be a CMO or it may be a FSDO which has a certificate management unit (CMU). The certificate manager may be:

- An office manager,
- A unit supervisor,
- A supervisory principal inspector (PI),
- A POI,
- A principal maintenance inspector (PMI), or
- A principal avionics inspector (PAI).

B. POI. The POI is responsible for operations within an ADE program. The POI reports to the certificate manager. The organization of operations below the level of POI is in the discretion of the POI, subject to the concurrence of the certificate manager and the RFSD manager. Other operations inspectors assigned to an ADE program support the POI, but may have unrelated activities as well. Similarly, the operator's employees involved in the ADE program also support the POI. Such employees may include the director of operations, the chief pilot, the director of training, the respective fleet manager, and others.

C. Aircrew Program Managers (APM). An APM is an appropriately trained operations inspector, who is also specifically trained by an operator, to oversee the certification activity and to manage the surveillance of that operator's training program in a specific airplane type. An APM reports to the POI.

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D. Partial Program Manager (PPM). One or more PPMs may be assigned to complement the APM in oversight and management activities related to an ADE program. A PPM is specifically trained in the same manner as the APM, and reports to the APM.

13-79 ADE PROGRAM: FAA RESPONSIBILITIES.

A. Responsibilities of a Certificate Manager. A certificate manager is responsible for establishing policies and procedures for operations inspectors in relation to the operator. This responsibility includes coordinating administrative policies and functions, such as scheduling, and maintaining effective working relations between operations inspectors and the operator's employees. Specific functions include the following.

1) Administrative Supervision of APMs. This includes the following:

a) Preparation of APM Employee Performance Reports. District office managers and the RFSD manager organize the district offices so that effective supervisory and reporting relationships are established between a certificate manager and an APM.

b) Standardization of APMs. The APM position requires a high degree of independence, specialization, expertise, and flexibility. An APM usually requires only broad guidance from the certificate manager. On occasion, a certificate manager may be required to provide detailed and specific guidance to standardize APM activities and to implement national policy.

2) Resource Management. Certificate managers are responsible for promoting the implementation of an ADE program, when appropriate, and for recommending its implementation to the RFSD. A certificate manager is responsible for identifying APM resource requirements and for coordinating with the POI, the CHDO manager, and the RFSD to meet these requirements. Resource management functions include the following:

a) Monitoring APM Workloads and Assignments. An APM position may be initially established on the assumption that the APM workload will fully occupy the assigned inspector's time. A certificate manager is responsible for monitoring APM workload and for recommending the deletion of the APM position if workload decreases. On the other hand, a certificate manager may recommend that an APM position be augmented by one or more PPM positions.

1. When an APM's duties, as defined in this order, require less than 100 percent of the APM's available time, the certificate manager and the POI should consider the assignment of additional duties to the APM. For example, an APM might be assigned duty as a PPM on another type of aircraft, or duty as an assistant POI.

2. When an APM's duties, as defined by this order, exceed 100 percent of the APM's available time, the certificate manager and the POI should consider the assignment of a PPM for the particular airplane type.

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b) Identifying and Meeting Staffing Requirements to Support an APM. The certificate manager is responsible for ensuring that APM support requirements are identified and for coordinating with the POI, the CHDO manager, and the RFSD to meet those requirements. ADE program work and training requirements, as described in this handbook, must take priority over other inspector functions. When ADE program requirements have not been met, an APM should not be assigned other work. APMs should not normally be assigned administrative tasks or other duties such as answering complaints or conducting incident investigations and enforcement activities that are unrelated to an assigned ADE program. Such duties are more appropriately assigned to assistant POIs or other inspectors.

NOTE: This provision does not relieve an APM from normal violation and enforcement functions when the APM observes noncompliance in the course of ADE program activities. Likewise, it does not relieve an APM from normal administrative functions directly related to the ADE program.

c) Obtaining Manpower and Infrastructure to Support an APM. A certificate manager establishes channels to obtain the services of qualified inspectors to support APM programs, when necessary. Certificate managers coordinate with CHDO and local automation network managers to ensure that APMs are provided with adequate data processing support and are supplied with or can access computer-generated reports.

d) Overseeing APM Training Requirements. The certificate manager ensures that an APM is scheduled for the training provided by the operator, as specified in the Memorandum of Understanding (MOU) establishing an ADE program, and receives that training in timely manner. Similarly, the certificate manager ensures that an APM receives any requisite training provided by the FAA. The certificate manager identifies and coordinates any requirements with district and regional office management. A certificate manager is responsible for projecting needed training, together with attendant manpower and budget requirements, at least three years ahead.

3) Coordinating with Geographic Surveillance Units. Certificate managers are responsible for establishing procedures for communicating with:

- Units having responsibility for geographic surveillance of an operator, and
- Training Center Program Managers (TCPM) when an operator contracts for training at a training center or conducts its training at a training center using its own instructors and check airmen.

B. Responsibilities of a POI. A POI is responsible for all operational matters concerning the administration of the operator's certificate, including management of an ADE program when the operator participates in one. This responsibility includes the following:

1) Achieving Program Objectives. The POI monitors performance to ensure that the ADE program meets its objectives. Objectives are identified nationally under the National Work Program or in accordance with the Air Transportation Oversight System (ATOS) risk management process and locally by FAA managers as special or local emphasis items.

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2) FAA/Operator Relations. A POI implements policies and procedures established by the certificate manager.

C. Responsibilities of an APM. An APM supports the POI in technical matters and in surveillance of ADE program activities associated with a specific airplane type. An APM's functions include the following:

1) Airman Certification. An APM is responsible for ensuring that airman certification standards prescribed by Title 14 of the Code of Federal Regulations (14 CFR), by the practical test standards (PTS), and by this order are maintained in the ADE program, as applicable.

a) The operator nominates one or more aircrew program designee (APD) candidates for FAA consideration. An APM recommends a candidate to the POI for selection, and is responsible for qualifying each APD in the conduct of airman certification. An APM maintains certification standards through an active program of meetings and surveillance.

b) To ensure continued, firsthand knowledge of an operator's program and certification activities, an APM will personally conduct a minimum of four certification activities (oral, simulator or flight evaluations) annually, provided there is sufficient certification activity. If not, an APM will conduct a minimum of four proficiency checks, preferably with no advance notice.

2) Standardization of Check Airmen. An APM ensures that high standards are maintained in the operator's proficiency checks and line checks by developing and maintaining active surveillance of the operator's check airmen.

a) Observing Check Airmen, Initially and Biennially. An APM or PPM should observe each check airman performing a representative check airman function during the initial approval process. The initial check airman observation may be conducted by another qualified inspector when workload prevents an APM or PPM from performing the observation.

NOTE: Another inspector must receive approval from the appropriate POI or APM before conducting an initial check airman observation requested by an operator.

b) Performing Observation. An APM will ensure that each check airman is observed at least biennially (once every 2 years), in accordance with 14 CFR part 121, § 121.413 or 14 CFR part 135, § 135.339, as applicable (PTRS activity code 1641, 1642, 1643, 1644, 1645), or, for a check airman authorized as an APD, at least once per year, in accordance with procedures in Volume 13, Chapter 2, Section 3. Before a check airman candidate is approved, the APM determines the geographic unit that will have surveillance responsibility for that airman. This information is entered into the air operator's enhanced Vital Information Database (eVID) check airman file as a geographic district office (GDO). This information is downloaded to the respective GDO. The National Work Program Guidelines (NPG) process determines surveillance requirements for non-ATOS operators. The geographic unit is notified of the check airman approval so that an annual check airman observation may be made an "R" or

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"P" item in the PTRS system. This requirement applies to proficiency check airman and to line check airmen.

c) Conducting Inspections Personally. An APM will personally conduct a number of inspections annually. These inspections should include the following:

- At least four inspections (preferably no notice) of the operator's check airmen conducting proficiency checks, and
- At least four inspections of check airmen conducting line checks (preferably no notice).

3) Training Programs, Initial Review and Surveillance. An APM is responsible for reviewing a proposed training program for an assigned airplane type and, when appropriate, for recommending initial and final approval to the POI. An APM (and PPMs) will monitor an operator's actions when a trainee does not progress as scheduled or fails a proficiency test. An APM is responsible to the POI and the certificate manager for conducting surveillance and for reevaluating the adequacy of the training program at least once each calendar year (PTRS activity code 1626). This surveillance is entered as a "P" item in PTRS for that APM's annual work program. In this reevaluation, the APM should identify any deficiencies and recommend changes as appropriate. For part 121 air carriers, inspectors use the ATOS process for review of training programs.

4) Maintaining Airplane Qualification and Currency. An APM will maintain airplane qualification and currency, as specified in paragraph 13-82. Completion of the required training or check in the calendar-month before or after the due-month is considered to meet requirements, but does not change the due month.

5) Providing Technical Assistance. An APM develops expert knowledge of the assigned airplane type. An APM may provide technical assistance to other FAA inspectors and offices in incident, accident, and violation investigations related to that airplane type. An APM reviews the operator's procedures, policy and airplane operating manuals, minimum equipment list (MEL), and operations specifications (OpSpecs) as an integral part of the surveillance program (PTRS activity code 1621). An APM advises the POI in approving manuals and consults with the appropriate Aircraft Evaluation Group (AEG) for assistance in doing so.

6) En Route Surveillance. An APM is responsible for ensuring a high level of aircrew performance through en route surveillance of operations in the assigned airplane type. En route surveillance includes the following activities:

a) Determining Geographic Unit Responsibility. An APM determines which geographic unit has surveillance responsibility for each aircrew domicile. From the tables presented in Volume 6, the APM determines the desired number of observations and the proportion required for each aircrew domicile. The APM ensures that this information is made available to each geographic unit supervisor through the POI by August 1 of each year so that the supervisor may construct a work plan for the next fiscal year.

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b) Conducting En Route Surveillance. An APM personally conducts an en route inspection each quarter to maintain first hand knowledge of the operator's line operations. These observations are entered as "P" items on the APM's work program or conducted in accordance with the ATOS risk management process for part 121 air carriers.

c) Monitoring En Route Inspections. An APM continuously monitors the effectiveness of the en route inspections performed in the assigned airplane type. For example, an APM may find that an inadequate number of en route inspections are being conducted in a particular area of operation. The APM may recommend increased en route inspections to the POI. The POI, in turn, may refer the APM's recommendation to the appropriate geographic unit supervisor(s). An APM should analyze inspection results for trends that indicate a need for corrective action. The APM informs the POI of any trends or deficiencies identified and, if appropriate, recommends that the POI establish special-emphasis remedial action.

d) Preparing Annual En Route Inspection Trend Analysis. The POI, together with each APM, prepares an annual en route inspection trend analysis report. The POI provides a copy of the report to the operator. This report should refer to the comments and observations made by inspectors through the PTRS system. The report is not normally useful as a statistical tool alone, but it does act as an effective early warning and quality control tool for the FAA and for the operator's managers. The report is often a departure point for deliberations by the POI and the operator on the corrective measures to be taken by the operator.

7) Training Geographic Inspectors and Others. An APM participates in a process to provide training for geographic inspectors and other inspectors, as necessary, who are responsible for oversight of an air carrier participating in an ADE program. Such other inspectors might include an operator's POI or certificate manager. Training includes a flight training component and a ground training component comprising the operator's manuals, checklists, and procedures. Training is conducted annually with a 60-day prior notification to the appropriate geographic unit supervisor, so that the inspector may be scheduled in timely manner to attend. This training is accomplished at the FAA's expense, and is apart from the training provided by an operator at the operator's expense, as provided in the applicable MOU. (See later in this section.)

a) Flight Training.

1. For a geographic inspector, flight training in an appropriate airplane is normally accomplished in accordance with existing FAA procedures, namely:

- By the certificate manager's identifying the need in the annual call for training conducted by Flight Standards Training Division (AFS-500) in February and March, and
- By the inspector's attending training provided under the existing FAA contract for the respective airplane type.

2. Unlike other inspectors, those under ATOS are not required by current contracts to attend flight training provided by the respective contract training provider. Ideally, flight training is conducted by the operator upon which a geographic inspector conducts

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surveillance. However, as a practical matter, flight training provided by the pertinent operator is not always desirable and feasible. In such cases, flight training provided by the contract training provider—another air carrier certificate holder or a part 142 (training center) certificate holder—is an acceptable alternative.

b) Ground Training. Ground training conducted by the appropriate air carrier is the ideal supplement to the flight training described above. A geographic inspector should undergo operator-specific ground training like that of one of the operator's line pilots whenever possible. (Basic indoctrination training may be omitted.) An inspector's attendance in ground training generally does not generate extra costs to an operator, and should be planned and tracked as surveillance. See Volume 10, Air Transportation Oversight System, for more detail.

8) Exchanging of Information. An APM is encouraged to share information and ideas with other APMs and inspectors. An APM identifies inspectors in other FAA offices who are qualified in the APM's assigned airplane and who conduct surveillance on the APM's operator. When appropriate, an APM communicates directly with these inspectors and their supervisors. To provide feedback to district offices with geographic surveillance responsibility for the operator, an APM sends copies of the annual en route inspection program trend analysis report to those district offices.

9) Serving on Boards (Flight Standardization Board (FSB) and Flight Operations Evaluation Board (FOEB)). When selected, an APM should commit to serve on the FSB and/or the FOEB for the appropriate aircraft. An APM is uniquely qualified and is a valuable resource for these boards.

13-80 PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. This task requires knowledge of 14 CFR part 61, 63, 121, and/or 135 regulations as appropriate and FAA policies, and qualification as an aviation safety inspector (ASI) (Operations or Airworthiness) with designee oversight responsibilities.

B. Coordination. This task may require coordination between the managing FAA office, the RFSD, and/or the Air Transportation Division (AFS-200).

13-81 REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions):

- Title14 CFR parts 1, 61, 63, 91, 121, 135, 142, and 183.
- Title 49 of the United States Code (49 U.S.C.).
- PTRS Procedures Manual.

B. Forms: None.

C. Job Aids: Program Assessment Checklist.

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13-82 APM ELIGIBILITY REQUIREMENTS.

A. Eligibility Requirements. Before being assigned as an APM in an ADE program an inspector must meet the following eligibility requirements:

- Be fully qualified as an ASI, General Schedule (GS) 1825;
- Hold an airline transport pilot (ATP) certificate;
- Hold a type rating in an aircraft of the same group, for assignment to a part 121 aircraft;
- Hold a type rating in an aircraft of the same category, for assignment to a part 135 aircraft requiring a type rating;
- Hold a class rating in an aircraft of the same category, for assignment to a part 135 aircraft not requiring a type rating;
- Must pass the Flight Engineer (FE) written exam before beginning training with the operator, when the aircraft requires an FE;
- Recommended that the candidate have served a minimum of three years as an ASI performing airman certifications; and
- Must poses interpersonal skills including sound judgment, integrity, and professionalism in their oversight function. They must be able to communicate expectations, provide constructive feedback, and deal with conflict in a proactive manner.

NOTE: For a candidate for assignment to a part 121 airplane, the 3 years of experience must have been acquired in part 121 airplanes. For a candidate for assignment to a part 135 airplane, this experience must have been acquired in airplanes of the same category. The office manager, with the concurrence of the RFSD, may give credit for equivalent experience gained in industry as a check airman or as a Designated Pilot Examiner (DPE). Credit may also be given for experience in military service as an instructor or flight examiner in equivalent aircraft.

B. Evaluating APM Candidates. Additionally, CHDO managers will evaluate APM candidates to determine that they communicate appropriate expectations, provide constructive feedback, and deal with conflict in a proactive manner.

13-83 APM TRAINING BEFORE DESIGNATION. Before APM designation, an inspector must satisfactorily complete the same training and qualify to the same standards as flight crewmembers and as check airmen employed by the operator.

A. FAA Training. An APM candidate must complete applicable APM training. See Volume 13, Chapter 1, Section 1 for initial training requirements.

B. Minimum Required Training for an APM. An APM candidate must complete, to the satisfaction of the POI and the operator, at least the following curriculum segments of the operator's approved training program:

1) Basic indoctrination training.

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2) Pilot-in-command (PIC) initial equipment training, including type certification, when appropriate. If the operator does not have a PIC initial equipment training curriculum segment for the aircraft, APMs must complete the PIC transition curriculum for the aircraft. APMs will complete the FE initial equipment curriculum segment or transition curriculum, when applicable.

3) Any special training, such as Category (CAT) II, CAT III, or long-range navigation (LORAN) that is required by OpSpecs or otherwise for qualification as a PIC for the operator.

4) The operator's check airman training for the pilot duty position and for the FE duty position, when applicable.

5) Line observation experience. Instead of receiving Operating Experience (OE), as the operator's flight crewmembers do, the APM candidate will observe at least three online flight segments that are representative of the operator's use of that aircraft in line operations.

NOTE: An APM candidate is eligible for the advanced simulation provisions of part 121, Appendix H, and may receive the certification flight tests in a level C or higher simulator.

C. Inspector Duties During Training. During the period in which an APM candidate is in training with an assigned operator, the candidate should not be assigned or perform unrelated inspector duties.

D. APM Qualification in a New or Additional Airplane Type. Under limited conditions, an inspector may be assigned as an APM on more than one airplane type. The following guidance applies:

1) An inspector will not be assigned as an APM for more than one operator.

2) An APM assigned to an operator's program that involves a turbojet or other airplane requiring a type rating is normally current only in that airplane. An APM may be assigned responsibility for more than one airplane for an operator only with the specific approval of the RFSD manager.

3) An APM assigned to part 135 aircraft other than the transport and commuter category family of aircraft, may be assigned to two families of aircraft, as defined in Volume 3, Chapter 19, Section 1. In the multiengine, general-purpose airplane family other than transport and commuter category, an assigned APM may maintain qualification in two equivalent series of aircraft, such as the Cessna and Piper series.

4) Should it become necessary to qualify an APM in a new aircraft or in a second type of aircraft, the APM will complete all of the training requirements of this section for the second aircraft, except for the following:

- Basic indoctrination training, and
- That portion of check airman training not specific to the second airplane type.

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E. Costs of Training. The operator is responsible for providing all required training and bearing its costs. The FAA will bear the cost of any lodging and per diem incurred by the APM.

13-84 MAINTAINING APM QUALIFICATION. An APM must complete the same proficiency, currency, and recurrent training requirements as the operator's check airmen, with the exception of line checks.

NOTE: When an APM completes training in an aircraft, the APM completes the FAA PTRS Data Sheet form for these flights, showing in the comments section: "Participating in Aircrew Program Manager (or PPM) training with [air carrier name] Airlines in the [aircraft type] (specified) aircraft."

A. Recurrent Training.

1) Recurrent training for an APM consists of the same ground and flight training curriculum segments that the operator provides for its PICs, including the proficiency check requirements for a PIC and FE, when applicable. An APM should also complete the FAA air carrier operations inspector job function recurrent training, at least once in every 24 calendar-months (course number 21621). A proficiency check of an APM is conducted by an inspector chosen by the POI or by an APD observed by another inspector. A company-qualified check airman will occupy the second-in-command (SIC) position as a safety pilot during any APM proficiency check conducted in an airplane.

2) When the operator's training program features single visit training (under an exemption to part 121), or Advanced Qualification Program (AQP), an APM will participate in that training program in the same manner as the operator's PICs.

NOTE: Section 121.453 specifies the currency requirements for an FE. The POI and the operator should include a provision in the MOU to allow the APM to maintain currency as an FE. One method would be to provide simulator periods every 6 months for training and for checking.

B. Check Airman Qualification.

1) Training and Standardization Meetings. An APM will attend the recurrent check airman training and standardization meetings that the operator provides for its check airmen.

2) Single Visit Training and AQP. When the operator's training program features single visit training (under an exemption to part 121) or AQP, the APM will participate in the instructor and evaluator training required by those programs**.**

C. Landing Currency. The MOU between the FAA and the operator provides for the APM to maintain currency in the assigned airplane. An APM maintains landing currency (3 landings every 90 days) for each assigned airplane for which a type rating is required. Each operator offers its APM(s) the opportunity to accomplish landing currency by making available a minimum of 2 hours of simulator time each quarter. If the operator is unable to make available the required simulator time, the operator must provide an aircraft, at the operator's expense, to

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accomplish the required landing currency. For airplanes not requiring a type rating, an APM maintains currency for the assigned category, class, and equivalent grouping of airplanes.

D. Maintaining Dual Qualification. An APM assigned to two airplane types must be trained and qualified in both airplane types in accordance with this order and the operator's approved training program.

E. Failure to Maintain Qualification and Currency. An APM failing to maintain qualification in accordance with this paragraph will not perform APM functions until all qualification requirements are met.

1) Training completed in the month before or the month after the due-month is considered to have been accomplished in the due-month.

2) A POI will not designate an APD when the operator has not provided the APM with the opportunity to remain qualified and current. Likewise, the POI and CHDO managers must take positive action to ensure that FAA responsibilities are fulfilled for keeping an APM qualified and current.

13-85 TRANSITION WHEN AN APM POSITION IS VACATED.

A. Continuity of Staffing. The POI, the office manager, and the RFSD are responsible for assuring the continuity of FAA staffing of an ADE program.

1) When an APM (or PPM) makes known a plan that would cause a position vacancy, such as a planned transfer or a retirement date, the respective POI should immediately arrange for a replacement to be located, selected, and entered into training under the MOU with the affected operator.

2) When an APM (or PPM) vacates a position without time to prepare a replacement, the POI, the office manager, and the RFSD will collaborate to obtain the services of a qualified inspector(s) to act as a temporary replacement until the vacant position can be filled.

B. Position Vacancies. An outgoing APM completes the renewal requirements for those APDs whose designations will expire within 90 days of the date that the APM position will be vacated. If adequate FAA oversight of the ADE program cannot be maintained, the POI cancels one or more APD designations, and may consider canceling the ADE program. If an APM position is vacant for an extended time, the office manager, the POI, and the RFSD detail a qualified inspector to oversee the program. If the APM position remains unfilled for 6 months or more, the office manager will consider canceling the ADE program for the affected airplane fleet.

13-86 REMOTE TRAINING FACILITIES.

A. Facilities Outside the CHDO's Region. An operator with an ADE program may have training facilities located outside the CHDO's area of geographic responsibility. An APM working in such a program is assigned to the certificate-holding office. This APM will regularly travel to the training facility to accomplish APM functions.

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1) In some cases, this arrangement may be inefficient, and it may be beneficial to locate the APM in a facility other than the certificate-holding office. The POI and certificate-holding office manager evaluate the specific circumstances, particularly the time and means of commuting to the remote site. If the travel time between the certificate-holding office and the training facility is too great for an APM to travel and to perform APM functions in the same day, locating the APM in a district office closer to the training facility should be considered.

2) Another consideration is whether the APM can perform en route surveillance on the appropriate airplane type during travel to and from the training location.

B. Facilities in the Same Region. When the certificate-holding office and training facility are in the same region, the recommendation for an APM's remote placement is forwarded to the RFSD. When the certificate-holding office and training facility are in different regions, the recommendation is coordinated through the affected RFSDs and forwarded to the Air Transportation Division (AFS-200) for approval. The RFSD for the office in which the remote APM is located ensures that the necessary support is provided by that office.

13-87 AN OPERATOR'S RESPONSIBILITIES. Under an ADE program the operator makes the following special commitments:

A. FAA-Operator Relations.

1) The ADE program is based on the assumption that an open relationship between the operator and the FAA will be maintained. At any time that an operator participating in an ADE program is unwilling to maintain this vital, open relationship, the POI will cancel the program.

2) An operator must be willing to give an APM complete access to facilities, working level personnel, and managers. An operator must be willing to accept input from its POI and APM concerning procedures, manuals, and training programs and to seek mutually acceptable solutions for deficiencies at the working level. The operator must be willing to cooperate fully with incident, accident, and violation investigations. In this relationship compliance generally comes naturally. However, normal FAA enforcement procedures apply in respect to violations.

B. APM Support. An operator commits to provide training and to bear costs of qualifying the APM(s), PPM(s) when required, and replacements for APM or PPM vacancies before the vacancy occurs. The operator must be willing to cooperate in scheduling so that participating FAA inspectors meet qualification and currency requirements in a timely manner.

C. Information. The operator must agree to make the following information available to the POI and APM:

- Projected and revised training schedules,
- Projected and revised APD schedules,
- Notification of any failures and withdrawals from training,
- Actions taken on students who fail or who are withdrawn from training,

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- A report of additional training provided to airmen in excess of approved training hours, and
- A report of failed proficiency and line checks.

13-88 CHDO MANAGER'S RESPONSIBILITIES. (See also Volume 13, Chapter 1, Section 1, paragraph 13-11.) A manager of a certificate-holding office is responsible for establishing effective administrative systems to support an ADE program. This support includes the following:

A. Certification Paperwork. An office manager establishes and maintains administrative procedures for the efficient processing of certification paperwork. As much of the processing as possible should be accomplished by trained administrative personnel, not by an inspector, APM, or POI. An APM is not relieved of the responsibility to ensure that an APD punctually and accurately completes certification paperwork. A Flight Standards Service (AFS) office is not required to maintain hard copies of certification paperwork since the PTRS serves as a record of certification activity.

B. Data Processing Support and Standards Reports. The office manager establishes and maintains administrative procedures for entering APM and APD data into the PTRS. At the close of each quarter, the POI and the office managers will have three reports prepared for use by the APM in managing his/her work program. These reports are generated through ad-hoc procedures from the PTRS data base. In the future, these reports will be available as standard reports. The three reports are as follows:

1) APD Surveillance Report. An APD surveillance report, showing the surveillance accomplished on each APD during the past four quarters, should be formatted as follows:

- Operator;
- Aircraft type and name of each APD assigned to that aircraft;
- Name of each APM;
- Type of surveillance (oral/simulator/aircraft), and date of surveillance;
- Starting date of report; and
- Ending date of report.

2) Check Airman Surveillance Report. Check airman surveillance report, showing the surveillance accomplished on check airmen during the past four quarters, should be formatted as follows:

- Operator;
- Aircraft type and number of approved check airmen by specialty (proficiency check or line check);
- Names of check airmen observed, type of surveillance (proficiency check or line check), and date of surveillance;
- Starting date of report; and
- Ending date of report.

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3) Aircraft Activity Report. A quarterly activity report should be prepared for each aircraft in the operator's ADE program. (See Figure 13-6 for format.)

Figure 13-6. ADE Program Quarterly Activity Report

Aircraft Type: _____

Operator Name:_____

Dates: _____

PILOT CERTIFICATION		ORAL ATP/TR 1510/1514	SIMULATOR ATP/TP 1511/1515	AIRCRAFT ATP/TP 1512/1516
Conducted By:	APM	_____	_____	_____
	ASI	_____	_____	_____
	APD	_____	_____	_____
	Totals:	_____	_____	_____

FE CERTIFICATION		ORAL ORIGINAL/ADDED 1510/1518	SIMULATOR ORIGINAL/ADDED 1511/1519	AIRCRAFT ORIGINAL/ADDED 1512/1520
Conducted By:	APM	_____	_____	_____
	ASI	_____	_____	_____
	APD	_____	_____	_____
	Totals	_____	_____	_____

CHECK AIRMAN SURVEILLANCE – PTRS ACTIVITY CODE 1641, 1642, 1643, 1644, 1645

No. Conducted By APM _____ No. Conducted by ASI _____ Total: _____

APD SURVEILLANCE – PTRS ACTIVITY CODE 1672

No. Conducted By APM _____ No. Conducted by ASI _____ Total: _____

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DESIGNATED FLIGHT ENGINEER EXAMINER SURVEILLANCE – PTRS ACTIVITY CODE: 1668

No. Conducted By APM _____ No. Conducted by ASI _____ Total: _____

13-89 RFSD'S RESPONSIBILITIES.

A. Program Review and Approval. An RFSD manager is responsible for the review and approval of a proposed ADE program involving any operator located within the respective region. The RFSD should give written notification of any such action to AFS-200 and the AFS-500. The RFSD forwards a copy of the signed MOU to AFS-200 for review and tracking. In any case in which the MOU does not conform strictly to the guidance contained in this order, AFS-200 is party to the review and is the final signature authority. Besides the signatures of the POI, the certificate manager, and the RFSD manager, an AFS-200 signature will be shown on any approved, non-conforming MOU.

B. Resources. The RFSD manager ensures that an ADE program is allocated adequate staffing and funding to function effectively.

1) APM Training. Sufficient resources must be allocated to provide for the training of APMs, in accordance with the requirements of this order.

2) Staffing. An adequate number of APMs, PPMs, assistant POIs, ASIs, and clerical staff must be provided to accomplish the certificate management and APM functions described in this order in an effective and timely manner.

3) Planning. Personnel and budget forecasts for a three-year period will be prepared and revised annually by the certificate manager, and will be reviewed in each cycle by the RFSD manager. The RFSD manager will provide for turnover caused by promotions and retirement and for projected additional positions caused by growth in operators' ADE program activity.

C. Components of ADE Program Assessment. An RFSD conducts periodic reviews of each ADE program authorized within its region. The purpose of these reviews is to ensure that the ADE program is effectively managed in accordance with current FAA policies and procedures and that the program meets its objectives. These reviews are conducted using a risk management approach as often as necessary, but not less often than once each 36 months. A checklist for this purpose is provided in Figure 13-7.

1) Assessment Team Members. The program assessment team should consist of five members:

- A team leader from within the region, designated by the regional division manager;
- A POI of another operator having an ADE program, preferably from outside the region;
- Two APMs from other programs, preferably from outside the region; and

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- One ASI without supervisory responsibility from within the region.

2) Four Part Program Assessment Report. The program assessment report consists of at least four parts:

- An assessment of the operator's training program to determine if pilots (and FEs, if applicable) are being adequately trained;
- An assessment of the APDs and check airmen to determine if required performance standards are being maintained;
- An assessment of the certificate holder's operating practices to determine if there are any undetected trends which might affect safety (particular attention should be given to manuals, checklists, and operating procedures); and
- An assessment as to whether or not the operations portion of the certificate unit is performing effectively and a determination as to whether the division, certificate manager, POI, assistant POIs, and APMs have followed the guidance of this chapter.

3) Major Findings. The assessment contained in the program assessment report is divided into major and minor findings. Major findings consist of the following items:

- Operator deficiencies which could adversely affect safety and which have gone undetected, unreported, or uncorrected; and
- Management deficiencies which, in the opinion of the assessment team, have a major impact on the effectiveness of the program.

4) Minor Findings. Minor findings contained in the assessment report are those deficiencies which APMs or POIs have recognized. Those deficiencies are being corrected or are correctable. Minor findings should be brought to the attention of the appropriate individual(s) and may be resolved during the assessment period.

5) Oral Out Briefing. An oral out briefing is given to the certificate manager, the POI, and the APM(s). A written report of the assessment is prepared, containing the identification of each major finding and the recommended corrective action. A review of the extent and nature of minor findings is presented, but the identification of each minor finding and recommended action is unnecessary. A copy of the report is furnished to the certificate manager, the Regional Division Manager, and AFS-200. A separate out briefing is conducted for the operator. This out briefing should cover items of concern to the operator.

13-90 HEADQUARTERS (HQ) RESPONSIBILITIES.

A. ADE Program Oversight. The ADE program is one of the most effective designee processes in which the FAA participates. For that reason, any allegation or perception of abuse in the ADE program threatens the program. AFS-200 is the FAA's HQ office with primary responsibility for the ADE program nationwide. That division's chief objective is standardizing the program among the FAA regions, and, as a consequence, promoting its integrity, its effectiveness, and the program itself.

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B. Responsibilities. HQ has the following responsibilities:

1) Collect, Compare, and Track MOUs. AFS-200 will compare and track MOUs submitted by all regions. By that process, inconsistencies among regions, omissions, or misunderstandings of the ADE program are usually identified and corrected at an early stage.

2) Review and Approve Any Non-Conforming MOU.

a) The ADE program is founded on a quid pro quo agreement between an operator and the FAA, in which both parties benefit in operational effectiveness. (The public benefits from the safety gains coming from the diligence and expertise that both parties gain under a well-run ADE program.) MOUs are agreed to and signed by both parties. The specific terms of the MOU stipulate that an operator will provide training to inspectors who are charged with oversight responsibilities for appointed APDs.

b) The collegial nature of an effective ADE program has caused critics to allege abuse in some cases. For that reason, any ADE program proposing an MOU that does not conform strictly to the guidance in this order (including the sample MOU in Figure 13-8) will be reviewed, approved, and signed by AFS-200 in addition to the POI, certificate manager, and RFSD manager who routinely sign, signifying approval of the program.

Figure 13-7. Program Assessment Checklist

AREA I. OPERATOR'S TRAINING PROGRAM. An assessment of the operator's training program shall be conducted.

A. Are the airmen trained and certified in the program qualified for and proficient in the operations conducted?

B. Does the operator have a consistent cockpit management philosophy which is applied to all aircraft operated?

C. Does the operator's training program incorporate CRM training?

AREA II. APD AND CHECK AIRMAN PERFORMANCE. An assessment of the APD's/DFEE's and the check airman's performance shall be conducted to determine if the required standards are being maintained.

A. Is the level of competence required for the check airman and APD designation adequate?

B. Are the APDs complying with the airman certification regulations and the guidance of this handbook?

C. Are the check airmen complying with the regulations and guidance of this handbook?

AREA III. OPERATING PRACTICES. An assessment of the certificate holder's operating practices shall be made to determine if undetected trends are present which might affect safety.

A. Is the policy and direction provided by the operator clear and adequate?

B. Do crews adhere to the policy and guidance provided by the operator, the regulations, and safe operating practices?

C. Are problems or trends present that have not previously been recognized and documented?

D. Are corrective actions being taken to solve previously identified problems?

E. If there are previously identified problems, does the team judge the corrective actions as likely to be effective and sufficient?

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AREA IV. ADE PROGRAM MANAGEMENT. An assessment of the operations portion of the certificate unit will be made to determine if the APM is performing effectively in managing the ADE program.

A. Are APMs able to concentrate on technical questions, APD training, and the surveillance of APDs and check airmen, or are they required to concentrate on certification activities and enforcement duties?

B. Have APMs gained an expert knowledge of the operator's aircraft, manuals, procedures, management personnel, and training programs?

C. Are APMs personally conducting a minimum of four certification actions (oral tests or flight tests) each year?

D. Are APMs personally conducting the required number of inspections that follow?

- At least four inspections of the operator's check airmen conducting proficiency checks?
- At least four inspections of check airmen conducting line checks?
- Conducting surveillance of the operator's training program related activities for their assigned aircraft, to include initial, upgrade, differences, recurring, and specialized training?
- Conducting surveillance of the flight simulators and flight training devices used in the operator's training program to determine if they are being properly used with respect to program requirements and if they are being maintained so that training program effectiveness is not adversely affected?
- Are the operator's instructors and examiners documenting malfunctions in the simulators and flight training devices, and is the equipment being repaired promptly when discrepancies are noted?

E. Are APMs establishing programs to ensure that each check airman is observed at least once a year?

(1) Are geographic units being notified of check airman designations?

(2) Are the results of check airman observations being monitored and analyzed for trends?

F. Are APMs reviewing training programs for their assigned aircraft and monitoring operator's actions when students do not progress as scheduled or fail proficiency tests?

G. Are APMs monitoring and analyzing the effectiveness of the en route inspection program on both the operator and the assigned aircraft on a continuing basis?

(1) Are APMs determining the geographic units which have surveillance responsibility for aircrew domiciles of the assigned aircraft and providing geographic unit supervisors with information to establish "P" items by August 1 of each year?

(2) Are APMs analyzing inspection results for trends and other areas that indicate a need for corrective action?

(3) Are en route inspection trend analysis reports prepared by the POI in conjunction with each APM?

(4) Are copies of the report provided to and discussed with the operator?

(5) Are APMs identifying and training geographic unit inspectors who have specific surveillance responsibilities for segments of the program the APM manages?

(6) Are APMs exchanging information and ideas with other AMPs and inspectors?

H. Applying the guidance of Volume 5, Chapter 5, Section 2 (40 airman certification actions per year), how many APMs should be assigned to the program?

(1) Is this number too many or too little for the conditions found? Are there other factors such as the need for expert training present?

(2) Have future factors been identified and planned for?

I. Is the operator willing to participate in the program?

(1) Is the operator providing the APMs with the training previously agreed to?

(2) Is the operator extending privileges and courtesies to APMs required as a condition of the program?

(3) Is the operator giving APMs unrestricted access to facilities, working-level personnel, and managers?

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(4) Is the operator willing to accept input from the POIs and APMs concerning procedures, manuals, and training programs and to seek mutually acceptable solutions for deficiencies at the working level?

(5) Is the operator willing to cooperate fully with incident, accident, and violation investigations?

(6) Is the operator cooperating in scheduling so that APM qualification and currency requirements are accomplished in a timely manner?

(7) Is the operator providing the required information to the POI and APMs?

J. Is there a memorandum of agreement between the operator and the CHDO?

(1) In the team's opinion, does the memorandum effectively define the responsibilities of both parties?

(2) Are these responsibilities being faithfully discharged?

(3) Has the memorandum of understanding been kept up to date?

K. Is the operations unit effectively managed?

(1) Is the certificate manager informed about issues, problems, and corrective actions within the ADE program?

(2) Are both the authority and responsibility for accomplishing the administrative functions related to management of the certificate and to the ADE program vested in one senior operations inspector, who reports to and is directly responsible to the certificate manager?

(3) In the team's opinion, is the organizational structure effective?

(4) How is the operations unit measuring, analyzing, and ensuring that the ADE program meets its objectives?

(5) Have policies and procedures been established for operations inspectors in relation to the operator? In the opinion of the team, are these policies and procedures effective?

(6) Does the office organizational structure ensure that supervisory and reporting relationships between the POI and the APMs are effective?

(7) Have APMs' resource requirements been analyzed annually and projected three years ahead? Has coordination been conducted with the certificate manager, office manager, and the RFSD to ensure that these requirements have been satisfied?

(8) Has a budget forecast for three years ahead been forwarded to the certificate manager and to the regional FSDO?

(9) Have APMs' administrative support requirements been identified and coordinated with the certificate manager to obtain the necessary support?

(10) Are APMs scheduled for required training from both the operator and from the FAA? Are APMs actually receiving the required training from both the operator and from the FAA?

(11) Were channels established to obtain the services of qualified inspectors in support of APM programs when necessary?

(12) Are adequate data processing support facilities supplied?

L. Are APMs completing the same training and qualified to the same standards as flight crewmembers and check airmen employed by the operator in the assigned aircraft? Are APMs completing the following training?

(1) Basic indoctrination training?

(2) PIC initial equipment training?

(3) Special training, such as CAT II, CAT III, or LORAN, that is required for qualification as a PIC for the operator?

(4) The operator's check airman training for the pilot duty position for the FE duty position, when applicable?

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(5) Observing at least three crews on line flights before designation?

M. During the period in which APM candidates are training with assigned operator, are they relieved of normal inspector duties?

N. Is the operator satisfied with the qualifications and competency of the individuals assigned as APMs?

O. Are office managers and POIs coordinating with the RFSD to assure continuity of the ADE program when an APM is reassigned?

P. If an operator has training facilities located outside the area of geographic responsibility of the CHDO, has an analysis been made of the benefits of locating the APMs within the CHDO?

13-91 ESTABLISHING AN ADE PROGRAM. An operator or the FAA may initiate discussions about the establishment of an ADE program. A POI should discuss the contents of this chapter in detail with the assigned operator interested in an ADE program. An operator should completely understand the program's objectives and the specific terms of the MOU establishing the program. A sample MOU is included as Figure 13-8.

A. MOU Approved by the RFSD.

1) The MOU must be signed by:

- An appropriate official for the operator,
- The POI,
- The certificate manager, and
- The RFSD manager.

2) The certificate manager forwards a copy of the MOU, any appropriate attachments, and the certificate manager's recommendations to the RFSD manger for review.

3) If the RFSD manager determines that the ADE program should be established, the RFSD manager signs and dates the MOU in the space provided, signifying approval.

4) The RFSD manager returns the original copy of the MOU to the certificate holding office for retention in its ADE program files, and forwards a copy to AFS-200.

B. MOU Not Approved by the RFSD. If the RFSD manager determines the ADE program should not be established, the manager forwards a letter to the appropriate office manager and returns the proposed MOU. The letter must contain an explanation of the reasons for withholding approval.

C. Non-Conforming MOU, Subject to FAA HQ Approval. In any case in which the MOU does not conform strictly to the guidance contained in this order, including the sample MOU (Figure 13-8), AFS-200 is party to the review and is the final signature authority. The RFSD manager forwards the proposed MOU to AFS-200. Besides the signatures of the POI, the certificate manager, and the RFSD manager, an AFS-200 signature will be shown on any approved, non-conforming MOU.

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13-92 PROGRAM REVISIONS. Revisions to an approved ADE program may be required for a variety of reasons, such as mergers and equipment changes. The POI will consider the effects of such changes and take appropriate action. Typically, the MOU is revised. Some changes, such as mergers, may affect more than one operator. Recommendations for changes affecting more than one operator in the same region will be forwarded to the RFSD for action. Office managers are responsible for continually evaluating the effectiveness of ADE programs and for responding to feedback on a timely basis. This evaluation is integral to ongoing continuous improvement.

Figure 13-8. Sample Memorandum of Understanding

MEMORANDUM OF UNDERSTANDING
BETWEEN
[NAME OF AIR CARRIER]
AND THE
FEDERAL AVIATION ADMINISTRATION

This Memorandum of Understanding (MOU) is based upon guidance in FAA Order 8900.1, Flight Standards Information Management System (FSIMS), Volume 13, Chapter 2. The parties to this MOU are [NAME OF AIR CARRIER], and the Federal Aviation Administration (FAA) Flight Standards District Office (FSDO) (or certificate management office (CMO)).

1. The Aircrew Designated Examiner (ADE) program has been established pursuant to the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 183, which permits, among other things, the delegation of certification authority and responsibility to selected and mutually agreed-upon [NAME OF AIR CARRIER] check airmen to be known as Aircrew Program Designees (APD). These APDs may conduct airman certification tests under the supervision of FAA inspector(s), known as Aircrew Program Managers (APM). APMs report directly to [NAME OF AIR CARRIER] principal operations inspector (POI) in all matters pertaining to the ADE program.

2. POIs are responsible for management of the ADE program. The POI's functions include establishing policies and procedures, and coordinating and standardizing the activities of FAA inspectors assigned to support [NAME OF AIR CARRIER] ADE program.

3. In order to function effectively in an ADE program, the APM and assigned inspectors require an expert knowledge of the training program and operational procedures being conducted by the operator. [NAME OF AIR CARRIER] agrees to extend to the APM and assigned inspectors all privileges that the operator grants to its own flight instructors and check airmen, except the privilege of acting as pilot in command (PIC) of an aircraft in actual flight operations and those personnel functions that are afforded employees of as a condition of employment. For example, the APM or assigned inspectors must be granted the same authority to operate the controls of flight simulators and flight training devices (FTD) as the operator grants to its own flight instructors and check airmen.

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4. APDs will be nominated by [NAME OF AIR CARRIER] in accordance with the policies and procedures outlined in FAA Order 8900.1 and appropriate FAA guidance. APD nominees must complete both [NAME OF AIR CARRIER] and FAA required training prior to appointment and will conduct all authorized duties and responsibilities under the supervision of the assigned APM. It is understood that APDs with FAA certification authority will be required to complete the training associated with the issuance of FAA certificates. Required FAA training will normally be provided by the APM in accordance with existing FAA guidelines; however, from time to time other FAA authorized instructors may be assigned to accomplish required training. This training may require the nominee to travel to FAA training facilities not associated with the APD's principal or satellite center. The FAA agrees to provide APD training at no cost to [NAME OF AIR CARRIER] however, associated travel and logging expenses will be the responsibility of [NAME OF AIR CARRIER]. Once designated, APDs may be removed by either party, at any time, if that individual becomes unacceptable to the FAA or [NAME OF AIR CARRIER]. Notification of such removal will be made in writing to the other party on or before the effective date of such removal. The policies and procedures contained in FAA Order VS 1100.2 will be followed whenever removal action is contemplated or conducted.

5. [NAME OF AIR CARRIER] shall provide the following training at its own expense for the APM and assigned FAA inspectors participating in the ADE program. The training provided shall be the same training that [NAME OF AIR CARRIER] provides to its own flight instructors, and check airmen for initial qualification and recurrent training. Assigned inspectors shall complete the appropriate training to the mutual satisfaction of [NAME OF AIR CARRIER] and the POI. Should an assigned inspector fail to progress through training satisfactorily, [NAME OF AIR CARRIER] shall provide the same remedial training that it provides to its own crewmembers. Should the inspector continue to fail to reach or maintain a mutually satisfactory level of competency, the POI shall meet with an appropriate airline official to resolve the matter. The minimum required training shall consist of (but not necessarily be limited to):

a. Basic indoctrination training;
b. Initial and recurrent aircraft equipment training, including type rating(s) and Flight Engineer (FE) class rating, if required);
c. Training in any appropriate specialty curriculums associated with an aircraft training program (e.g., Category (CAT) II or III procedures or special instrument approach procedures);
d. Training on the proper operation of center training devices, FTDs, and simulators;
e. Flight (simulator)/ground instructor and check airman training and FE training (if required);
f. [NAME OF AIR CARRIER] training policy and procedures;
g. Any other center programs and or procedures that [NAME OF AIR CARRIER] believes appropriate to maintain the APM and assigned inspectors currency in the operators polices and procedures; and
h. Sufficient PIC training in each aircraft authorized, each calendar quarter to ensure currency in accordance with FAA Order 4040.9 (current edition).

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Note: The training referenced in subparagraphs 5a through 5g may be used to the extent practical to satisfy the requirements of the PIC training required by paragraph 5h. Training considered duplicative in nature is not required.

6. The training referenced in paragraph 5 will be administered and scheduled in accordance with the following guidelines and shall be provided by [TRAINING CENTER NAME] at its expense:

a. All subject training will be scheduled in coordination with the APM.
b. Training and checking events will be scheduled between the hours of 0600 and 2200, unless an exception has been coordinated with the APM.
c. The APM and assigned inspectors may be scheduled for training in regularly scheduled classes with [NAME OF AIR CARRIER] crewmembers.
d. A 2-hour simulator period will be made available for administering the APM's and assigned inspector's required proficiency checks unless a greater period is required due to aircraft complexity and standard [NAME OF AIR CARRIER] policies for evaluations relating to that specific aircraft(s). The FAA agrees to use reasonable efforts to provide a complete crew compliment for these evaluations. However, in situations where this is not practicable, or at [NAME OF AIR CARRIER] request, [NAME OF AIR CARRIER] will provide a qualified instructor to fill required crew positions as appropriate. [NAME OF AIR CARRIER] will also provide a qualified simulator or FTD operator if required.
e. The APD and other crewmember services referenced in this paragraph will be provided at no cost to the FAA.

7. In lieu of Operating Experience (OE), assigned inspectors shall be authorized to observe from the cockpit observer's seat, a minimum of four revenue segments. This observation process requires that assigned inspectors remain with the flightcrew throughout the assigned trip pattern to become familiar with a cross section of line operations.

8. The APM and assigned inspectors are eligible for the advanced simulation provisions of 14 CFR part 121 appendix H, and may receive the certification check in a level C or level D simulator. The ADE program may exist apart from an appendix H training program. In such cases the inspectors training may be conducted in whole or in part in an aircraft, provided at the operator's expense.

9. The APD/DFEE candidate shall submit a complete statement of professional qualifications on FAA Form 8710-6, Examiner Designation and Qualification Record. The APM shall review the qualifications and shall recommend to the POI that the candidate be designated as an APD/DFEE, when appropriate.

10. APD/DFEE designees shall be authorized to perform airman certification in only one type of aircraft. This authority is limited to the certification of graduates of [NAME OF AIR CARRIER] FAA-approved training program who are employed as flight crewmembers by [NAME OF AIR CARRIER].

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11. All airman certification activities conducted by the APD/DFEE shall be limited to the privileges of the APD's/DFEE's own airman certificate, Certificate of Authority (COA), and letter of authority (LOA), and shall be effective only in the aircraft type named in those documents. The APD may conduct pilot oral tests and flight tests for air transport pilot (ATP) certificates, and for category, class and type ratings to be added to ATP certificates. DFEEs may conduct oral tests and flight tests for FE certificates and for the addition of class ratings to FE certificates.

a. An APD/DFEE may not conduct an evaluation of any applicant, which the APD/DFEE has instructed for the certificate or rating to be issued, unless specifically authorized by the POI or the APM. Further, an APD/DFEE may not conduct FAA written tests, special medical evaluations, tests for waivers, or any test for competency under applicable provisions of Title 49 of the United States Code (49 U.S.C.), (formerly section 609(a) of the Federal Aviation Act). Any privileges and limitations shown on an examiner's COA issued outside an ADE program, do not apply within the ADE program.

b. The APM shall train and evaluate the prospective APD/DFEE in applicable duties and responsibilities. The APD/DFEE shall be trained and evaluated in at least the following areas:

1) The knowledge, skill, and ability requirements for the initial issuance of the ATP certificate, and for type ratings added to the ATP certificate (or for the issuance of the initial FE certificate and added class ratings, as applicable);
2) The procedures, methods and techniques associated with administering the required certification tests;
3) The responsibilities, authority, and limitations of designated examiners under regulations and under FAA Orders 8900.1 and VS 1100.2;
4) The use of FAA forms and job aids associated with the particular job function;
5) The administrative procedures and supervisory relationships that exist in the ADE program;
6) The understanding that [NAME OF AIR CARRIER] policies and economics, union loyalties and seniority issues are not relevant when certifying airmen; and
7) After formal training, observation of the APM conducting a complete oral test, a complete flight test, and all the necessary briefings; also, the completion of all certification paperwork.

12. The APM shall ensure that essential FAA materials such as FAA forms are available to authorized APDs. The APM shall conduct regular meetings with the APDs for the purpose of maintaining an effective working relationship and resolving problems. The APM shall attend crewmember safety meetings held by [NAME OF AIR CARRIER].

The following signatures signify agreement to this MOU and its contents:

FOR AND ON BEHALF OF [NAME OF AIR CARRIER].

_____	(mm/dd/yyyy)
(Position)	Effective Date

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FOR AND ON BEHALF OF FEDERAL AVIATION ADMINISTRATION

_____	(mm/dd/yyyy)
(FAA POI or Office Mgr)	Effective Date
(FSDO/CHDO address)	
_____	(mm/dd/yyyy)
(Other FAA signatures as deemed appropriate)	Effective Date
(Position and office)	

RESERVED. Paragraphs 13-93 through 13-105.

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