Section 3 Safety Assurance System: Evaluate Part 121/135 Management Personnel

2-151 OBJECTIVE. This section provides guidance on evaluating the qualifications of Title 14 of the Code of Federal Regulations (14 CFR) part 119 management personnel for certificate holders/applicants conducting operations under 14 CFR parts 121 and 135.

2-152 GENERAL.

A. Required Management Personnel Positions. From time to time, certificate holders may wish to employ persons in management positions when the candidate lacks the required pilot-in-command (PIC) experience, operational management experience, or aircraft maintenance experience, but possesses other comparable experience which suitably prepares them for the desired position.

1) Part 121 Positions. Part 119, § 119.65 establishes management and technical personnel positions for certificate holders operating under part 121 (i.e., Director of Safety (DOS), Director of Operations (DO), Chief Pilot, Director of Maintenance (DOM), and Chief Inspector). Section 119.67 specifies the airman qualifications and experience for personnel serving in these positions for part 121.

2) Part 135 Positions. Section 119.69 establishes management and technical personnel positions for certificate holders operating under part 135 (i.e., DO, Chief Pilot, and DOM). Section 119.71 specifies the airman qualifications and experience for personnel serving in these positions for part 135.

3) Airman Qualifications and Experience. Candidates for these required part 121 or part 135 management and technical positions must have the airman qualifications and experience needed to carry out their duties and responsibilities with a degree of expertise consistent with the certificate holder’s responsibility to operate with the highest possible degree of safety. Sections 119.67(e) and 119.71(f) specify deviation authority for other comparable managerial and supervisory experience to provide flexibility for those candidates who do not meet the regulatory requirements, yet may effectively manage the air carrier operation. It is quite possible a candidate may not possess the regulatory experience required to hold a position, but has other comparable experience which exceeds the expertise gained in meeting the minimum experience qualifications for the position.

4) Deviation Request and Approval Procedure. The deviation request and approval procedure described below offers the certificate holder flexibility to employ persons who may not possess the exact type or quantity of experience required by the regulations, but who possess other comparable experience. However, the deviation request procedure does not accommodate individuals who do not possess the required airman qualifications.
B. Management Vacancies under §§ 119.65 and 119.69. If there is a vacancy in one of these required positions, the certificate holder is required to notify the certificate-holding district office (CHDO), per § 119.65(e)(3) or § 119.69(e)(3), of any vacant positions and should state the course of action the certificate holder is taking to fill the position. The certificate holder may take any of the following courses of action to comply with §§ 119.65 and 119.69 when there has been a change in personnel or a vacancy in one of the required management personnel positions.

1) Current Employee Appointment. If the certificate holder operating under part 121 has an employee that meets the certification and experience requirements of § 119.67, or a certificate holder operating under part 135 has an employee that meets the certification and experience requirements of § 119.71, the certificate holder may appoint that employee to the vacant position. The notice required by § 119.65(e)(3) or § 119.69(e)(3) should state this change in personnel. The certificate holder should demonstrate in the notice that the individual meets the qualification requirements of § 119.67 or § 119.71. The individual can show they meet those requirements by submitting a copy of the résumé showing his or her qualifications, certificates, ratings, and experience.

2) Deviation. If the certificate holder has an employee or candidate who does not meet the appropriate airman experience, managerial experience, or supervisory experience requirements of § 119.67 or § 119.71, but who has comparable experience and can effectively perform the functions associated with the position, the certificate holder may request a deviation from these experience requirements in accordance with the guidance provided in this section. If the Federal Aviation Administration (FAA) grants the deviation, the certificate holder can then appoint that employee to the vacant position, thus complying with § 119.65 or § 119.69. Deviation authority is not available for a person who does not hold the required airman certificates and ratings.

3) Waiver/Authorization. If a certificate holder can show that it can perform the operation with the highest degree of safety under the direction of fewer or different categories of management personnel, the certificate holder can utilize §§ 119.65(b) and 119.69(b) to ask the FAA to amend its operations specifications (OpSpecs) and approve the operation without filling the otherwise required position.

4) Unable to Fill Within 10 Days. If a certificate holder is not able to fill the vacancy within the 10-day period prior to being required to notify the CHDO of the vacancy or use one of the options outlined above, the notification required by § 119.65(e)(3) or § 119.69(e)(3) must state which position is vacant and should include an explanation for the vacancy. A vacancy in one of the required positions should only exist for a reasonable duration of time needed by the air carrier to fill the position. Based on current industry practice, this process should not exceed 60 days.

2-153 PROCEDURES TO REVIEW FOR THE PROPOSED PART 119 MANAGEMENT POSITION CANDIDATE.

A. Items for the Principal Inspector (PI) to Complete. When a certificate holder submits an applicant for one of the part 119 required management personnel, the PI will complete the following:
1) Check the certificate for appropriate ratings and validity.

2) Check the National Program Tracking and Reporting Subsystem (NPTRS) database for Compliance Action and other contact history, Accident Incident Data System (AIDS) for events, and Enforcement Information System (EIS) for previous violation history.

3) Verify employment history (résumé) to ensure that:
   - The applicant meets the necessary experience requirements;
   - The applicant has not held a similar position and contributed materially to a certificate revocation in a 14 CFR part 121, 125, or 135 operation; and
   - Prior work history conducted in other jurisdictional Flight Standards District Offices (FSDO) indicates there have been no past performance issues.

4) Interview the candidate. Determine the candidate’s knowledge of the following:
   - Sections of the certificate holder’s/applicant’s manual;
   - Certificate holder’s OpSpecs; and

5) Determine the eligibility of the candidate. Base the decision on the information above.

B. Final Steps. The PI will inform the certificate holder/applicant of the results after they have received all the information.

2-154 Evaluating Management Experience of Maintenance Personnel. Personnel responsible for the inspection and maintenance organizations should possess the qualifications required in §§ 119.67(c) and (d) and 119.71(e). If a certificate holder/applicant elects to contract out all maintenance, the positions defined by parts 121 and 135 are still required.

A. FAA Required Positions:
   - The DOM (parts 121 and 135) is responsible and accountable for administering the certificate holder’s/applicant’s maintenance program, and
   - The Chief Inspector (part 121) is responsible and accountable for administering the certificate holder’s/applicant’s required inspection program.

B. Separation of Maintenance and Inspection Functions.

1) The FAA requires a Chief Inspector for part 121 certificate holders/applicants, but not for part 135 certificate holders/applicants.
   a) Part 121, § 121.365 requires a certificate holder/applicant to have a maintenance organization that ensures separation of maintenance and inspection responsibilities and management personnel.
b) If the certificate holder/applicant will have a contractual agreement with another organization to perform its Continuous Airworthiness Maintenance Program (CAMP), it may apply for deviation from the Chief Inspector requirement. However, the certificate holder/applicant must have a DOM or equivalent position to schedule maintenance and ensure proper administration of the CAMP.

2) For part 135 certificate holders/applicants, a DOM (or equivalent) is necessary to ensure separation of inspection and maintenance functions required by part 135, § 135.423. Each person performing required inspections in addition to other maintenance, preventive maintenance, or alterations shall organize the performance of those functions so as to separate the required inspection functions from the other maintenance, preventive maintenance, and alteration functions. The separation shall be below the level of administrative control at which overall responsibility for the required inspection functions and other maintenance, preventive maintenance, and alteration functions is exercised (refer to § 135.423(c)).

C. Part-Time and Full-Time Positions. The aviation safety inspector (ASI) should determine if the part 135 certificate holder/applicant will use part-time management personnel. Each person employed on a part-time basis must be readily available to fulfill all responsibilities of the position that are consistent with the certificate holder’s operations.

D. DOM Position. Individuals considered for the DOM position should have experience in any position where the normal duties and responsibilities included management oversight and/or control of the development, upkeep, and responsibility for one or more of the following elements of an aircraft maintenance or inspection program:

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

E. Chief Inspector Position. Individuals considered for the Chief Inspector position should have experience in any position where the normal duties and responsibilities included management oversight and/or control of the development, upkeep, and responsibility for one or more of the following elements of an aircraft maintenance inspection, quality control (QC), or quality assurance (QA) functions within a maintenance or inspection program:

- Inspection program policy and procedures;
- Airworthiness;
- Inspection organization;
- QA of the performance and approval of maintenance, preventive maintenance, and alterations;
• QA and approval of alterations performed by maintenance providers or contractors;
• Maintenance recordkeeping; and
• Inspection personnel training.

2-155 EVALUATING MANAGEMENT EXPERIENCE FOR DOS.

A. DOS Position. Each certificate holder that conducts operations under part 121 must have a DOS. There are no qualifications listed in § 119.67 for the DOS position. Therefore, the CHDO shall consider the following information when approving an individual for the DOS position. This person is responsible for keeping the certificate holder’s highest management officials fully informed about the safety status of the company, and therefore should have extensive operational experience and professional qualifications in aviation. This should include the knowledge and understanding of aviation safety programs, aviation safety standards, and safe aviation operating practices.

1) The DOS should have established professional credentials. These credentials may be any of the following:
   a) An FAA Commercial or Airline Transport Pilot (ATP) Certificate,
   b) An FAA Mechanic Certificate, or
   c) An FAA Aircraft Dispatcher Certificate.

2) The DOS should have professional aviation supervisory experience. Such experience may include any combination of the following, providing the total experience is greater than or equal to three years:
   a) Experience in a supervisory position with a part 121 or a scheduled part 135 certificate holder.
   b) Experience in a position comparable to (a) above, in U.S. military aviation operations.
   c) Experience in a supervisory position with a government department, board, or agency that deals directly with aviation matters.
   d) Experience in a supervisory position with a part 91 or 125 operations/aviation department.
   e) One year of experience may be listed if the candidate has completed a degree in higher education relating to aviation safety.

B. DOS Functions. An independent, full-time position is required. However, in a small part 121 operation, the DOS functions may be an additional function of a current manager. Any request for a management deviation from the regulatory requirement involving a combined DOS position must be approved by the Air Transportation Division (AFS-200).
NOTE: Requests for one individual to fill this position for more than one certificate holder concurrently will not be considered.

NOTE: Small carriers are generally defined as those carriers operating fewer than 10 airplanes.

2-156 MANAGEMENT DEVIATION REQUEST.

A. Make the Request Through the CHDO. When a certificate holder requests a management experience deviation or recency-of-experience deviation other than those required by §§ 119.65 through 119.71, the certificate holder must make such requests through its CHDO. The request must adhere to the following processes and procedures and contain a minimum of the information shown in subparagraphs 2-156B1) through 10) below for evaluation:

B. Submit a Request Letter. The request must contain the following:

1) Full certificate name, including doing business as (DBA) of the requesting entity (e.g., ABC Airlines, Inc. DBA XYZ Air).

2) Complete address and certificate number of the certificate holder.

3) Full name and airman certificate number of the management applicant.

4) Number of aircraft by category, class, and type.

5) Number of employees/pilots/other crewmembers.

6) Areas and kinds of operations authorized (e.g., Contiguous United States, State of Alaska, domestic, supplemental, and helicopter air ambulance (HAA)).

7) Statement of operations authorized (e.g., single PIC, basic part 135 on-demand only, and part 121 supplemental).

8) Any other management deviations held by the certificate holder.

9) Statement of why the certificate holder requires a management deviation, management position(s) involved, and an explanation of what comparable experience the individual has that would justify the management deviation.

10) A résumé for the individual that specifically outlines their work experiences and duration of each work experience to include: PIC/second in command (SIC) time in type of aircraft, and/or management experience for the kind of operations conducted, to include size of operation.

NOTE: The information contained in the résumé must be verified by a PI assigned to the certificate.
11) The field office will include a statement indicating the NPTRS, AIDS, and EIS records of the certificate holder and management applicant have been reviewed. If any adverse findings were encountered, the PI should verify that the adverse history has been appropriately resolved.

2-157 EVALUATING DEVIATION REQUESTS FOR DOM AND CHIEF INSPECTOR POSITIONS.

NOTE: Deviations may be granted from the minimum experience requirements in § 119.71. However, the applicant must hold the appropriate certificates and ratings.

A. Consider Overlapping Duties. Before allowing an individual to serve as DOM or Chief Inspector, the PI must consider the other duties performed by that person. For example, if that person also plans to serve as a flightcrew member, the ASI must ensure that those duties will not interfere with the person’s responsibilities as DOM or Chief Inspector.

B. The PI is Responsible for the Following:

1) Interviewing the individual involved to verify aviation experience and qualifications;

2) Determining the size, scope, any known expansion plans, and safety record of the certificate holder;

3) Verifying the applicant’s résumé and experience; and

4) Recommending approval or denial of the request.

2-158 EVALUATING DEVIATION REQUESTS FOR DO AND CHIEF PILOT POSITIONS.

NOTE: The regulations do not permit the grant of deviation against an airman certificate requirement for individuals who do not hold the required airman certificate or rating. However, they may apply for an exemption under 14 CFR part 11.

A. Comparable Experience. A management position experience deviation may be issued for individuals who lack the minimum management experience requirements, PIC experience requirements, or recency-of-experience requirements (specified in §§ 119.67 and/or 119.71) if appropriate comparable experience is presented and accepted by the Administrator.

1) For the DO, the evaluation of experience in any position where the normal duties and responsibilities included management/ supervisory oversight and/or responsibility and authority over the development, upkeep, and performance of one or more elements of a certificate holder’s operational control system may be considered as comparable experience. Management positions, wherein the applicant exercised aviation management decisionmaking
processes, may be considered as comparable experience (e.g., Assistant DO, Assistant Chief Pilot, Flight Department Manager, Military Flight Unit Commander, Standards and Evaluation Officer, and Aviation Safety Officer). Experience involving operational control may also be acceptable (e.g., supervisory aircraft dispatcher or supervisory flight follower).

2) For Chief Pilot positions, the candidate should possess a minimum of 12 months PIC experience in either part 121 or part 135 operations within the previous 72 months.

3) For other comparable experience to be used for both the DO and Chief Pilot positions, all acceptable, comparable experiences added together must equal or exceed the required 3 years. The following examples may be considered as comparable experience:

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

B. Unacceptable Experience. The Administrator may not consider the following experience as comparable: military single pilot operations without unit leadership or command responsibility experience, flight instruction, 14 CFR part 137 aerial application operations, 14 CFR part 133 helicopter external-load operations, or academic education or writing manuals without managerial experience implementing the same manuals.

2-159 THE EVALUATION TOOL FOR MANAGEMENT EXPERIENCE DEVIATION REQUESTS (OPERATIONS). The following four tools will help guide and standardize management deviation requests for part 119 DO and Chief Pilot positions for both parts 121 and 135 operations. You can find these worksheets via the links provided. These matrices are only a tool and they are not regulatory. The Experience Rating Worksheet (ERW) has total points that should be met; however, even though the qualifications may have driven the score to either higher or lower than the base standard, the user/evaluator at any level may accept the results with an operationally valid reason. An example of a valid reason could be the candidate has extensive military flight management experience, but does not yet have enough air carrier experience for the points. Another example would be a previous FAA inspector that does not meet the currency requirements in either part 121 or part 135, but in their previous career, they had extensive air carrier management and line experience. See subparagraph 2-159B below for experience interpretation discrepancies.

A. ERW Instructions. At the top of the worksheet, find basic instructions for using the worksheet. Due to the limited space on the worksheet, additional instructions are located below.
1) Military experience is limited to a maximum of 24 months in aggregate. Military experience has value, but do not rely upon this experience as the sole source of the total points required. There must be either some part 121 or part 135 experience in the applicant’s past.

2) Part 91/91K/125 experience is limited to a maximum of 36 months in aggregate. Once again, this experience has value, but do not rely upon this experience as the sole source of the total points required. There must be either some part 121 or part 135 experience in the individual’s past.

3) Use caution when evaluating qualifications for a DO position in part 121 operations. PIC time cannot be the only factor accounting for points. Management experience is a requirement.

4) The appropriate regional technical branch office approval shall be based upon a review of the FSDO work.

B. Experience Interpretation Discrepancies. If a discrepancy is noted, the regional Flight Standards division (RFSD) must return the worksheet with an explanation to the FSDO for consideration.

1) If the RFSD disagrees with the FSDO, the RFSD must pass the request, this worksheet, and a memo indicating the points of disagreement to AFS-200 for review.

2) If a submittal package contains experience which is not listed on the ERW (OTHER-line 21), the CHDO must forward the applicant’s résumé with a recommendation and supporting rationale to accept the experience as comparable to the RFSD. The burden of submitting complete and helpful information in favor of acceptance of the candidate rests with the submitting certificate holder.

3) If the RFSD needs assistance interpreting or rating the submittal, forward the entire package to AFS-200.

C. After Completion of ERW Tool.

1) The RFSD technical branch representative who conducted the review must check the appropriate approval check box, and enter their initials and date.

2) The RFSD must retain a copy and return the original ERW to the FSDO. If the deviation package is sent to headquarters (HQ), be sure to include a copy of the ERW.

3) The principal operations inspector (POI) must retain the original ERW in the certificate holder certificate file until the applicant has acquired sufficient experience that a management deviation is no longer required.

NOTE: The ERWs depicted below are only samples. The most current tools will be found on the respective Web site. The address is shown on the top of the ERW. As these tools evolve, the most current version will be available.
**Figure 2-79. Sample of Experience Rating Worksheet for Director of Operations**

**Under § 119.69 (Part 135)**

**NOTE:** This hyperlink will provide access to the spreadsheet and permit data entry and autocalculation:
http://www.faa.gov/about/office_org/headquarters_offices/avs/offices/afs/afs200/branches/afs250/.

---

**EXPERIENCE RATING WORKSHEET- DIRECTOR OF OPS - 135 (REV 4)**

**INSTRUCTIONS:**
1. Enter Airman's name and Operator's designator code.
2. Review resume against experience categories listed below. Enter number of ACTUAL MONTHS of experience in cell adjacent to each experience category.
3. The tool will multiply by WEIGHT rating for each category.
4. RFSD: OK? - Manager reviews POI rating vs. Resume, checks appropriate approval check box, enters Initials and Date.
5. BIFSD: OK? - Region FSD-200 or equal approval (as required), reviews RFSD work, checks appropriate approval check box, enters Initials and Date.
6. If discrepancy is noted, return to FSDO for correction. If disagreement is noted, pass to AFS-200 for review.

**Minimum total points must meet or exceed 360.**

<table>
<thead>
<tr>
<th>AIRMAN NAME AND OPERATOR DESIGNATOR</th>
<th>RATED BY</th>
<th>RFSD: OK?</th>
<th>BIFSD: OK?</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIRMAN NAME AND OPERATOR DESIGNATOR</td>
<td>RATED BY</td>
<td>RFSD: OK?</td>
<td>BIFSD: OK?</td>
</tr>
</tbody>
</table>

**RECENT PIC EXPERIENCE**

<table>
<thead>
<tr>
<th>AIRMAN NAME AND OPERATOR DESIGNATOR</th>
<th>RATED BY</th>
<th>RFSD: OK?</th>
<th>BIFSD: OK?</th>
</tr>
</thead>
</table>

**AND COMPARABLE EXPERIENCE**

<table>
<thead>
<tr>
<th>AIRMAN NAME AND OPERATOR DESIGNATOR</th>
<th>RATED BY</th>
<th>RFSD: OK?</th>
<th>BIFSD: OK?</th>
</tr>
</thead>
</table>

---

**TOTAL POINTS (TOTAL QUALIFIED EXPERIENCE MUST MEET or EXCEED 360 POINTS)**

0
**Figure 2-80. Sample of Experience Rating Worksheet for Chief Pilot Under § 119.69 (Part 135)**

NOTE: This hyperlink will provide access to the spreadsheet and permit data entry and autocalculation: http://www.faa.gov/about/office_org/headquarters_offices/avs/offices/afs/afs200/branches/afs250/.

---

**EXPERIENCE RATING WORKSHEET- CHIEF PILOT-135 (Rev 4)**

**INSTRUCTIONS:**

1. Enter Airman’s name and Operator’s designator code.
2. Review resume against experience categories listed below. Enter number of ACTUAL MONTHS of experience in cell adjacent to each experience category. **NOTE:** 135/121 PIC must meet or exceed 72 MONTHS.
3. The tool will multiply WEIGHT rating for each category.
4. The POINTS cell on the right will populate and a total will be reflected on the bottom.
5. POI signs adjacent to RATED BY cell on the right will populate.
6. FSDO: Region AFS-240 or equal approval (as required), reviews FSDO work, checks appropriate approval check box, enters RFSD OK?
7. RFSD OK?: Region AFS-240 or equal approval (as required), reviews POI rating vs. Resume, checks appropriate approval check box, enters RFSD OK?

**Minimum total points must meet or exceed 360.**

<table>
<thead>
<tr>
<th>AIRMAN NAME AND OPERATOR DESIGNATOR</th>
<th>FSDD OK? □</th>
<th>YES □</th>
<th>NO □</th>
<th>Manager Date-</th>
<th>RFSD OK? □</th>
<th>YES □</th>
<th>NO □</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RATED BY:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL RECENT PIC EXPERIENCE MEETS OR EXCEEDS 12 MONTHS?**

<table>
<thead>
<tr>
<th>1 135 PIC RECENT EXPERIENCE (WITHIN PAST 72 MONTHS)*</th>
<th>MONTHS</th>
<th>WEIGHT</th>
<th>POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 x 10</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2 121 PIC RECENT EXPERIENCE (WITHIN PAST 72 MONTHS)*</th>
<th>MONTHS</th>
<th>WEIGHT</th>
<th>POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 x 10</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

**RECENT PIC EXPERIENCE (MINIMUM 12 MONTHS REQUIRED)**

<table>
<thead>
<tr>
<th>3 135 PIC WITHIN PAST 7-10 YEARS*</th>
<th>MONTHS</th>
<th>WEIGHT</th>
<th>POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 x 6</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4 135 SIC WITHIN PAST 10 YEARS*</th>
<th>MONTHS</th>
<th>WEIGHT</th>
<th>POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 x 4</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5 121 PIC WITHIN PAST 7-10 YEARS*</th>
<th>MONTHS</th>
<th>WEIGHT</th>
<th>POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 x 5</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6 121 SIC WITHIN PAST 10 YEARS*</th>
<th>MONTHS</th>
<th>WEIGHT</th>
<th>POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 x 5</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>7 135 / 121 / 125 / 91K FAA DESIGNATED CHECK AIRMAN*</th>
<th>MONTHS</th>
<th>WEIGHT</th>
<th>POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 x 7</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>8 135 / 121 DIRECTOR OF OPERATIONS*</th>
<th>MONTHS</th>
<th>WEIGHT</th>
<th>POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 x 7</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>9 135 / 121 Asst. DIRECTOR OF OPERATIONS performs role of DIRECTOR OF OPERATIONS and exercises delegated authority when DIRECTOR OF OPERATIONS is geographically separated or is off duty*</th>
<th>MONTHS</th>
<th>WEIGHT</th>
<th>POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 x 6</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>10 135 / 121 Asst. CHIEF PILOT performs role of Chief Pilot and exercises delegated authority when CHIEF PILOT is geographically separated or is off duty*</th>
<th>MONTHS</th>
<th>WEIGHT</th>
<th>POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 x 6</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>11 PI 91 OPERATIONS/AVIATION DEPT. PIC of same or more complex aircraft in same category and class, in an aviation operation or department operating at least 2 aircraft with at least 4 pilots, transporting personnel and/or cargo to destinations other than points of departure.*</th>
<th>MONTHS</th>
<th>WEIGHT</th>
<th>POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 x 4</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>12 PI 91 / 91K OPERATIONS/AVIATION DEPT. SIC of same or more complex aircraft in same category and class, in an aviation operation or department operating at least 2 aircraft with at least 4 pilots, transporting personnel and/or cargo to destinations other than points of departure.*</th>
<th>MONTHS</th>
<th>WEIGHT</th>
<th>POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 x 2</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>13 PI 91 / 91K / 125 OPERATIONS/AVIATION DEPT CHIEF PILOT of same or more complex aircraft in same category and class, in an aviation operation or department operating at least 2 aircraft with at least 4 pilots, transporting personnel and/or cargo to destinations other than points of departure.*</th>
<th>MONTHS</th>
<th>WEIGHT</th>
<th>POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 x 4</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>14 PI 91 / 91K / 125 OPERATIONS/AVIATION DEPT MANAGEMENT Same or more complex aircraft in same category and class, in an aviation operation/department with at least 2 aircraft and 4 pilots, transporting personnel and/or cargo to destinations other than points of departure.*</th>
<th>MONTHS</th>
<th>WEIGHT</th>
<th>POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 x 4</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>15 MILITARY COMMANDER a Flight Unit, (Squadron or higher) with Pilot ratings in similar or more complex aircraft of same category and class*</th>
<th>MONTHS</th>
<th>WEIGHT</th>
<th>POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 x 6</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>16 MILITARY AIRCRAFT COMMAND PILOT (requiring Pilot Crew of 2 or more) in one or more complex aircraft in same category and class</th>
<th>MONTHS</th>
<th>WEIGHT</th>
<th>POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 x 5</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>17 MILITARY STANDARDS/EVALUATION PILOT in similar or more complex aircraft of same category and class*</th>
<th>MONTHS</th>
<th>WEIGHT</th>
<th>POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 x 6</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>18 MILITARY FLIGHT OPERATIONS OFFICER</th>
<th>MONTHS</th>
<th>WEIGHT</th>
<th>POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 x 4</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>19 MILITARY PILOT / DIRECTOR OF SAFETY / SAFETY MANAGER for Military Unit or PI 91 / 91K / 121 / 125 OPERATIONS / AVIATION DEPT with similar or more complex aircraft in same category and class, in an aviation operation/department with at least 3 aircraft and 4 pilots</th>
<th>MONTHS</th>
<th>WEIGHT</th>
<th>POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 x 2</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>20 Former FAA AVIATION SAFETY INSPECTOR, OPERATIONS</th>
<th>MONTHS</th>
<th>WEIGHT</th>
<th>POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 x 3</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>21 Former FAA AVIATION SAFETY INSPECTOR, OPERATIONS</th>
<th>MONTHS</th>
<th>WEIGHT</th>
<th>POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL POINTS (TOTAL QUALIFIED EXPERIENCE MUST MEET or EXCEED 360 POINTS)**

0
**EXPERIENCE RATING WORKSHEET: DIRECTOR OF OPERATIONS -121**

**INSTRUCTIONS:**
1. Enter Airman’s name and Operator’s designator code.
2. Review resume against experience categories listed below. Enter number of ACTUAL MONTHS of experience in cell adjacent to each experience category.
3. The tool will multiply by WEIGHT rating for each category.
4. If discrepancy is noted, return to FSDO for correction. If disagreement is noted, pass to AFS-200 for review.

**NOTE:**
Under § 119.65 (Part 121)
This hyperlink will provide access to the spreadsheet and permit data entry and autocalculation:

**Minimum total points must meet or exceed 720**

<table>
<thead>
<tr>
<th>AIRMAN NAME AND OPERATOR DESIGNATOR:</th>
<th>RATED BY:</th>
</tr>
</thead>
<tbody>
<tr>
<td>FSDO: OK? □ YES □ NO</td>
<td>Manager-Date</td>
</tr>
<tr>
<td>FSDO: OK? □ YES □ NO</td>
<td>Manager-Date</td>
</tr>
</tbody>
</table>

**RECENT PIC EXPERIENCE**

<table>
<thead>
<tr>
<th>MONTHS</th>
<th>WEIGHT</th>
<th>POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>135 PIC RECENT EXPERIENCE [WITHIN PAST 72 MONTHS]*</td>
<td>0 x 9 = 0</td>
</tr>
<tr>
<td>2</td>
<td>121 PIC RECENT EXPERIENCE [WITHIN PAST 72 MONTHS]*</td>
<td>0 x 10 = 0</td>
</tr>
</tbody>
</table>

**AND COMPARABLE EXPERIENCE**

<table>
<thead>
<tr>
<th>WEIGHT</th>
<th>POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 x 7 = 0</td>
<td></td>
</tr>
<tr>
<td>0 x 8 = 0</td>
<td></td>
</tr>
<tr>
<td>0 x 7 = 0</td>
<td></td>
</tr>
<tr>
<td>0 x 4 = 0</td>
<td></td>
</tr>
<tr>
<td>0 x 4 = 0</td>
<td></td>
</tr>
<tr>
<td>0 x 2 = 0</td>
<td></td>
</tr>
<tr>
<td>0 x 5 = 0</td>
<td></td>
</tr>
<tr>
<td>0 x 5 = 0</td>
<td></td>
</tr>
<tr>
<td>0 x 4 = 0</td>
<td></td>
</tr>
<tr>
<td>0 x 5 = 0</td>
<td></td>
</tr>
<tr>
<td>0 x 6 = 0</td>
<td></td>
</tr>
<tr>
<td>0 x 7 = 0</td>
<td></td>
</tr>
<tr>
<td>0 x 8 = 0</td>
<td></td>
</tr>
<tr>
<td>0 x 9 = 0</td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL RECENT PIC EXPERIENCE**

<table>
<thead>
<tr>
<th>WEIGHT</th>
<th>POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 x 9 = 0</td>
<td></td>
</tr>
<tr>
<td>0 x 10 = 0</td>
<td></td>
</tr>
<tr>
<td>0 x 7 = 0</td>
<td></td>
</tr>
<tr>
<td>0 x 8 = 0</td>
<td></td>
</tr>
<tr>
<td>0 x 7 = 0</td>
<td></td>
</tr>
<tr>
<td>0 x 4 = 0</td>
<td></td>
</tr>
<tr>
<td>0 x 4 = 0</td>
<td></td>
</tr>
<tr>
<td>0 x 2 = 0</td>
<td></td>
</tr>
<tr>
<td>0 x 5 = 0</td>
<td></td>
</tr>
<tr>
<td>0 x 5 = 0</td>
<td></td>
</tr>
<tr>
<td>0 x 4 = 0</td>
<td></td>
</tr>
<tr>
<td>0 x 5 = 0</td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL POINTS [TOTAL QUALIFIED EXPERIENCE MUST MEET and EXCEED 720 POINTS]**

<table>
<thead>
<tr>
<th>WEIGHT</th>
<th>POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 x 9 = 0</td>
<td></td>
</tr>
<tr>
<td>0 x 10 = 0</td>
<td></td>
</tr>
<tr>
<td>0 x 7 = 0</td>
<td></td>
</tr>
<tr>
<td>0 x 8 = 0</td>
<td></td>
</tr>
<tr>
<td>0 x 7 = 0</td>
<td></td>
</tr>
<tr>
<td>0 x 4 = 0</td>
<td></td>
</tr>
<tr>
<td>0 x 4 = 0</td>
<td></td>
</tr>
<tr>
<td>0 x 2 = 0</td>
<td></td>
</tr>
<tr>
<td>0 x 5 = 0</td>
<td></td>
</tr>
<tr>
<td>0 x 5 = 0</td>
<td></td>
</tr>
<tr>
<td>0 x 4 = 0</td>
<td></td>
</tr>
<tr>
<td>0 x 5 = 0</td>
<td></td>
</tr>
</tbody>
</table>

**RATED BY:**

**Manager-Date**

**UNCONTROLLED COPY WHEN DOWNLOADED**
Check with FSIMS to verify current version before using
Figure 2-82. Sample of Experience Rating Worksheet for Chief Pilot Under § 119.65 (Part 121)

NOTE: This hyperlink will provide access to the spreadsheet and permit data entry and autocalculation:

**EXPERIENCE RATING WORKSHEET - CHIEF PILOT-121**

INSTRUCTIONS:
1. Enter Airman’s name and Operator’s designator code.
2. Review resume against experience categories listed below. Enter number of actual months of experience in column adjacent to each experience category. **NOTE**: LACK OF RECENT PIC FLIGHT EXPERIENCE MINIMUM IS 12 MONTHS.
3. The tool will multiply by weight rating for each category.
4. THE POINTS Cell on the right will populate and a total will be reflected on the bottom.
5. POI signs adjacent to RATED BY.
6. POI signs adjacent to RATED BY.
7. FSDO OK?: Manager reviews POI rating vs. Resume, checks appropriate approval check box, enters Initials and Date. **NOTE**: If discrepancy is noted, return to FSDO for correction. If disagreement is noted, pass to AFS-200 for review.
8. Minimum total points must meet or exceed 360.

### RECENT PIC EXPERIENCE (MINIMUM 12 MONTHS REQUIRED)

<table>
<thead>
<tr>
<th>AIRMAN NAME AND OPERATOR DESIGNATOR</th>
<th>RFSD: OK?</th>
<th>RATED BY:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>YES</td>
<td>Manager</td>
</tr>
<tr>
<td></td>
<td>NO</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RECENT PIC EXPERIENCE (WITHIN Past 72 MONTHS)*</th>
<th>MONTHS</th>
<th>WEIGHT</th>
<th>POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 135 PIC RECENT EXPERIENCE (WITHIN Past 72 MONTHS)*</td>
<td>0 x 10 = 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. 121 PIC RECENT EXPERIENCE (WITHIN Past 72 MONTHS)*</td>
<td>0 x 10 = 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL RECENT PIC EXPERIENCE MEETS OR EXCEEDS 12 MONTHS?</td>
<td>NO</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AND OTHER COMPARABLE EXPERIENCE</th>
<th>MONTHS</th>
<th>WEIGHT</th>
<th>POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. 135 PIC WITHIN PAST 7-10 YEARS*</td>
<td>0 x 6 = 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. 135/121 SIC WITHIN PAST 10 YEARS*</td>
<td>0 x 4 = 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. 121 PIC WITHIN PAST 7-10 YEARS*</td>
<td>0 x 5 = 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. 121 SIC WITHIN PAST 10 YEARS</td>
<td>0 x 3 = 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. 135/121 /325 FAA DESIGNATED CHECK AIRMAN*</td>
<td>0 x 7 = 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. 135/121 DIRECTOR OF OPERATIONS*</td>
<td>0 x 8 = 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. 135/121 Asst. DIRECTOR OF OPERATIONS performs role of DIRECTOR OF OPERATIONS and exercises delegated authority when DIRECTOR OF OPERATIONS is geographically separated or is on leave. *</td>
<td>0 x 6 = 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. 135/121 Asst. CHIEF PILOT performs role of Chief Pilot and exercises delegated authority when CHIEF PILOT is geographically separated or is on leave. *</td>
<td>0 x 5 = 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. PI 125 OPERATIONS/AVIATION DEPT. PIC of same or more complex aircraft in same category and class, in an aviation operation, in an operation or department operating at least 2 aircraft with at least 4 pilots, transporting cargo and/or persons to destinations other than points of departure. *</td>
<td>0 x 4 = 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. PI 125 OPERATIONS/AVIATION DEPT. SIC of same or more complex aircraft in same category and class, in an aviation operation, in an operation or department operating at least 2 aircraft with at least 4 pilots, transporting cargo and/or persons to destinations other than points of departure. *</td>
<td>0 x 2 = 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. PI 91 /9XK OPERATIONS/AVIATION DEPT. PIC of same or more complex aircraft in same category and class, in an aviation operation, in an operation or department operating at least 2 aircraft with at least 4 pilots, transporting cargo and/or persons to destinations other than points of departure. *</td>
<td>0 x 4 = 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. PI 91 /9XK OPERATIONS/AVIATION DEPT. SIC of same or more complex aircraft in same category and class, in an aviation operation, in an operation or department operating at least 2 aircraft with at least 4 pilots, transporting cargo and/or persons to destinations other than points of departure. *</td>
<td>0 x 2 = 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. PI 91/9XK / 125 OPERATIONS/AVIATION DEPT CHIEF PILOT of same or more complex aircraft in same category and class, in an aviation operation, in an operation or department operating at least 2 aircraft with at least 4 pilots, transporting cargo and/or persons to destinations other than points of departure. *</td>
<td>0 x 4 = 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. PI 91/9XK / 125 OPERATIONS/AVIATION DEPT MANAGER of same or more complex aircraft in same category and class, in an aviation operation, in an operation or department operating at least 2 aircraft with at least 4 pilots, transporting cargo and/or persons to destinations other than points of departure. *</td>
<td>0 x 4 = 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. MILITARY COMMANDER of a Flight Unit, (Squadron or Higher) with Pilot ratings in similar or more complex aircraft of same category and class*</td>
<td>0 x 6 = 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. MILITARY AIRCRAFT COMMAND PILOT (requiring Pilot Crew of 2 or more) in same or more complex aircraft in same category and class</td>
<td>0 x 5 = 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. MILITARY STANDARDS/EVALUATION PILOT in similar or more complex aircraft of same category and class**</td>
<td>0 x 6 = 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. MILITARY FLIGHT OPERATIONS OFFICER</td>
<td>0 x 4 = 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21. SAFETY OFFICER / DIRECTOR OF SAFETY / SAFETY MANAGER for Military Unit, Air Carrier, or PI 91 OPERATIONS / AVIATION DEPT with similar or more complex aircraft in same category and class, in an aviation operation or department with at least 3 aircraft and 4 pilots</td>
<td>0 x 2 = 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22. Former FAA AVIATION SAFETY INSPECTOR, OPERATIONS 121</td>
<td>0 x 3 = 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23. OTHER EXPERIENCE in aviation management not listed above.</td>
<td>0 x 4 = 0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL POINTS (TOTAL QUALIFIED EXPERIENCE MUST MEET and EXCEED 360 POINTS)</td>
<td>0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2-160 FEWER, COMBINED OR DIFFERENT CATEGORIES OF REQUIRED MANAGEMENT POSITIONS.

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

NOTE: Applicants who serve in a combined management position should not be assigned to any additional duties (e.g., Check Airman and Instructor).

B. Consolidated Positions.

1) Depending on the organization’s needs, the Administrator may allow consolidation of required part 119 management positions with other positions. When the Administrator allows consolidation of positions, the individual serving in the consolidated position must meet the qualifications of both positions.

2) Before allowing an individual to serve as DOM or Chief Inspector, the PI must consider the other duties performed by that person. For example, if that person also plans to serve as a flightcrew member, the ASI must ensure that those duties will not interfere with the person’s responsibilities as DOM or Chief Inspector.

C. Combined/Consolidated Management Position Steps.

1) The certificate holder/applicant should submit a request to the CHDO. The request should contain the following information:

   a) The type and number of aircraft operated by the certificate holder.

   b) Size, scope, any known expansion plans, and safety records of the certificate holder.

   c) Any accident or enforcement history of the certificate holder and management applicant.

   d) Include all ongoing certificate holder corrective action commitments made by the involved management position holders prior to the request, and an updated corrective action plan (CAP) if the request will affect any of the commitments.

NOTE: The field office will include a statement indicating the NPTRS, AIDS, and EIS history of the certificate holder and management applicant have been reviewed. If any adverse findings were encountered, the PI should verify that the adverse history has been appropriately resolved.
e) A résumé of the individual who is, or will be, in combined or consolidated positions, including:

• Dates of experience,
• Types of aircraft,
• Specific areas of experience,
• Aeronautical experience,
• Types of management positions previously held, and
• Certificate number(s).

2) The PI is responsible for the following:

a) Interviewing the individual involved to verify aeronautical experience and qualifications;

b) Determining the size, scope, any known expansion plans, and safety record of the certificate holder;

c) Verifying the applicant’s résumé and experience;

d) Ensuring that any applicant or certificate holder corrective action commitments are not adversely affected by the requested management position change; and

e) Recommending approval or denial of the request.

3) The approval process for combining or consolidating management positions is the same as that for management deviations found in paragraph 2-161.

2-161 APPROVING MANAGEMENT DEVIATIONS.

A. Authority to Approve or Deny Management Deviation Requests for Parts 121 and 135 Commuter Operations.

1) Deviation authority in § 119.67(e) for part 121 and § 119.71(f) for part 135 commuter operations extends the accountability for granting or denying deviations from this section to the AFS-200 division manager and the Aircraft Maintenance Division (AFS-300) manager. This authority shall include approval to combine positions or numbers of position under §§ 119.65(b) and 119.69(b) for part 135 commuter operations.

2) A certificate holder may request a deviation through the assigned PI. The CHDO recommends approval or denial of the deviation; they forward their recommendation to the RFSD in the form of a memo. For DO and Chief Pilot positions, the ERW tools will be used and attached with the package. The RFSD will evaluate the recommendation received and forward their decision for concurrence or nonconcurrence in the form of a memo to HQ.

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

4) If the HQ division manager finds, after consideration is given to the size and scope of the operation, that the person’s qualifications and experience are comparable with the sought-after position, a deviation may be granted under § 119.67(e) or § 119.71(f). The Administrator may, at any time, terminate any grant of deviation authority issued under this paragraph.

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

**Figure 2-83. Part 121/135 Commuter Deviation Flowchart**

---

**B. Delegation of HQ Authority to Approve or Deny Management Deviation Requests for § 119.71 On-Demand Operations.**

1) The manager of the CHDO is authorized to approve or deny management experience or airman experience deviation requests for a single PIC authorization, and for basic part 135 on-demand certificate holders. This authority would include any combined position or numbers of management positions in accordance with § 119.69(b). The ERW tools provided in this chapter must be used for the Chief Pilot and DO positions.
2) If the CHDO has the authority, it will approve or deny the requests. The CHDO will respond to the certificate holder in writing. If the CHDO does not have the authority or chooses not to use that authority, it will make a written recommendation for approval or denial and forward the request to the RFSD in the form of a memo.

3) The RFSD manager is authorized to approve or deny management experience or airman experience deviations for all other part 135 certificate holders, except commuter. This authority would include any combined positions or numbers of management positions in accordance with § 119.69(b). The RFSD will review the package from the CHDO. If the RFSD had the authority as stated above, it will approve or deny the request. The RFSD’s evaluation must include the criteria addressed in paragraphs 2-157, 2-158, and 2-160 above along with the worksheet tools.

4) Once the RFSD has approved or denied the request, the RFSD will reply in writing to the CHDO with a statement of approval or denial for the request. If the RFSD does not have the authority, or encounters a situation where the criteria in the request is peculiar and they are uncomfortable in making the decision, the package may be forwarded to HQ along with the explanation as to why it is being elevated. The RFSD will attach their memo of recommendation for approval/denial and forward the request to AFS-200 or AFS-300, as appropriate. AFS-200 and AFS-300 will then follow the same process flow as described in subparagraph 2-161A5) above.

Figure 2-84. Part 135 On-Demand Flowchart
2-162 TASK OUTCOMES.

A. Reporting Systems.

1) For management deviation requests, enter activity code 1328 or 3319, as appropriate. Enter “119DEV” in the “National Use” field. Record comments of interaction with the certificate holders in the “Comments” section.

2) For evaluation of management personnel, use Safety Assurance System (SAS) automation and the associated Data Collection Tools (DCT).

B. Complete the Task. Completing this task will result in one of the following:

1) Acceptance of the candidate by approving OpSpec A006 and sending one of the following:
   a) A letter to the certificate holder/applicant indicating acceptance of the candidate.
   b) A letter telling the certificate holder/applicant to request a deviation through the CHDO if the candidate does not meet experience requirements or wishes approval of different positions. The candidate must have been found acceptable based on the interview.

2) Rejection of the candidate by sending a letter to the certificate holder/applicant listing the reasons for rejection.

C. Document the Task. File all supporting paperwork in the certificate holder’s/applicant’s file.

2-163 REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions):

- Title 14 CFR Parts 43, 65, 91, 119, 121, 135, and 145.
- Advisory Circular (AC) 120-59, Air Carrier Internal Evaluation Programs.
- Volume 10, Safety Assurance System Policy and Procedures.

B. Forms. None.

C. Job Aids. Job Task Analyses (JTA): 3.3.22.1, 3.3.22.2, and 3.3.22.3.

2-164 FUTURE ACTIVITIES. Follow Volume 10 to plan future surveillance in SAS. The PI should periodically review the appropriate related OpSpec and the deviation, if applicable. Update OpSpecs A005 and A006 as necessary.

RESERVED. Paragraphs 2-165 through 2-180.
3-19-14-1 GENERAL. This section contains information, direction, and guidance for principal operations inspectors (POI) and other inspectors responsible for the review and approval of pilot remedial training and tracking for certificate holders conducting operations under Title 14 of the Code of Federal Regulations (14 CFR) part 121. The approval process for remedial training and tracking follows the five-step process described in Volume 3, Chapter 19, Section 2. The current edition of Advisory Circular (AC) 121-39, Air Carrier Pilot Remedial Training and Tracking Program, provides additional information regarding remedial training and tracking. This section is related to Safety Assurance System (SAS) Element 2.1.1, (OP) Training of Flight Crewmembers.

A. Regulatory Requirements.

1) Part 121, § 121.415(h) requires that by March 12, 2019, a certificate holder’s training program must include a process for the regular analysis of individual pilot performance to identify pilots with performance deficiencies during training and checking, and multiple failures during checking.

2) Section 121.415(i) requires that by March 12, 2019, a certificate holder’s training program must include methods for remedial training and tracking of the pilots identified by the analysis process.

B. Definitions. The following are the definitions of the terms used in accordance with a remedial training and tracking program. Additional definitions of terms are located in Volume 3, Chapter 19, Section 1.

1) Failure. A failure is when an individual pilot does not satisfactorily complete a proficiency check or line check. This does not necessarily include failure of a specific maneuver/procedure/subject area for which the pilot receives additional training in accordance with § 121.441(e) during a proficiency check, if the pilot resumes the proficiency check and passes that maneuver/procedure/subject area and all other maneuvers/procedures/subject areas during that proficiency check.

2) Performance Deficiency. A performance deficiency is when an individual pilot repeatedly does not satisfactorily complete a maneuver/procedure/subject area or combination of maneuvers/procedures/subject areas during training and/or checking. This does not include practice during the normal course of training. However, this may include failure of a specific maneuver/procedure/subject area for which the pilot receives additional training in accordance with § 121.441(e) during a proficiency check, even if the pilot resumes the proficiency check and passes that maneuver/procedure/subject area and all other maneuvers/procedures/subject areas during that proficiency check.
3) **Remedial Training.** Additional training tailored to an individual pilot to address the performance deficiencies and/or failures identified in the certificate holder’s analysis of the individual pilot’s training and checking performance.

4) **Tracking.** A process to manage pilots with performance deficiencies and/or multiple failures to ensure that the performance deficiencies and/or failures are effectively corrected.

C. **Difference Between Remedial Training and Requalification Training.** A pilot who becomes unqualified, due to failure of a check or failure to complete recurrent training within the eligibility period, must complete requalification training. A pilot must complete remedial training if the certificate holder’s analysis has identified the pilot as having performance deficiencies during training and checking, and/or multiple failures during checking. Therefore, a pilot who fails a check must complete requalification training. If the certificate holder identifies that pilot as having performance deficiencies during training and checking, and/or multiple failures during checking, then that pilot must also complete remedial training and tracking. (See Volume 3, Chapter 19, Section 11 for additional information regarding requalification training.)

D. **Difference Between Tracking and Recurrent Training.** A pilot who completes remedial training must also complete tracking. Tracking is separate from required recurrent training and checking. Regardless of any additional training or checking that a pilot completes during tracking, recurrent training and checking is still required at the intervals specified in part 121. A pilot’s training/checking month (base month) and due month for recurrent training or checking may not be changed based on completion of any additional training or checking required by the certificate holder’s remedial training and tracking program.

3-19-14-3 **ANALYSIS PROCESS.** The certificate holder’s training program must include policies and procedures to provide for the regular analysis of individual pilot performance to identify pilots with performance deficiencies during training and checking and multiple failures during checking.

A. **Conduct of Analysis.** The certificate holder’s procedures should specify the individual(s) or department(s) that is responsible for conducting the analysis.

B. **Frequency of Analysis.** The certificate holder’s procedures must specify when the analysis will be conducted. The certificate holder must conduct analysis at least once every 12 months. To identify performance deficiencies and multiple failures as soon as possible, POIs should encourage certificate holders to conduct the analysis as indicated below.

1) **Initial, Transition, Upgrade, and Requalification.** The certificate holder should analyze an individual pilot’s performance after the completion of initial, transition, upgrade, or requalification training. Analysis may also be necessary before completion of the curriculum, due to pilot performance during the training.

2) **Recurrent.** The certificate holder should analyze an individual pilot’s performance after the completion of each recurrent training/checking. This includes ground training, flight training, proficiency checks, and line checks.
C. Records Reviewed During Analysis. The certificate holder’s procedures should specify the types of records that will be reviewed during the analysis. This may include instructor/check pilot comments and forms used during training and checking. POIs should encourage certificate holders to include at least the records indicated below.

1) Initial Training of New-Hire Pilots. The analysis should include a review of the pilot’s performance during the training to identify performance deficiencies and/or multiple failures.

2) Initial for Other than New-Hire Pilots, Transition, Upgrade, Requalification, and Recurrent. The analysis should include a review of the pilot’s performance during all training and checking with the certificate holder to identify performance deficiencies and/or multiple failures.

D. Identification of Performance Deficiencies and Multiple Failures. The certificate holder’s procedures must specify how the certificate holder will identify performance deficiencies and multiple failures. For a certificate holder without an electronic recordkeeping system, this may require manual review of the paper training/checking forms in the pilot’s file. For a certificate holder with an electronic recordkeeping system, the capabilities of the system may allow an electronic query, or a manual review of electronic records and/or paper forms may be necessary.

3-19-14-5 REMEDIAL TRAINING. The certificate holder’s training program must include policies and procedures for remedial training of pilots who have been identified through the certificate holder’s analysis process as having performance deficiencies and/or multiple failures.

A. Conduct of Remedial Training. The certificate holder’s procedures must specify that an appropriately qualified instructor or check pilot will conduct remedial training. In accordance with § 121.401(c), the instructor or check pilot conducting the remedial training must certify as to the proficiency and knowledge of the pilot upon completion of the remedial training.

B. Content of Remedial Training. The content of remedial training must be tailored to the individual pilot to address the performance deficiencies and/or failures. The certificate holder’s procedures should specify the individual(s) or department(s) that is responsible for determining the content of the remedial training.

C. Methods of Remedial Training. The certificate holder’s procedures must specify the method(s) of remedial training they will use to address performance deficiencies and failures. The following table contains examples of possible methods of remedial training:
For performance deficiencies or failures during:

| Remedial training may include: |
|-------------------------------|-----------------------------|
| Ground training and/or the equipment exam portion of proficiency checks. | One-on-one training with an instructor, repeat of all ground training modules, or a combination. |
| Flight training, the flight portion of proficiency checks, and/or line checks. | Additional ground and flight training, additional line-oriented flight training (LOFT), repeat of all flight training modules, or a combination. |

3-19-14-7 TRACKING. The certificate holder’s training program must include policies and procedures for tracking the pilots identified through the certificate holder’s analysis process as having performance deficiencies and/or multiple failures.

A. Conduct of Tracking. The certificate holder’s procedures should specify the individual(s) or department(s) that is responsible for conducting the tracking.

B. Frequency of Tracking. The certificate holder’s procedures should specify when tracking will be conducted. POIs should encourage certificate holders to conduct tracking more frequently than recurrent training/checking.

C. Methods of Tracking. The certificate holder’s procedures must specify the method(s) of tracking they will use. The following are examples of possible methods of tracking.

<table>
<thead>
<tr>
<th>Method of Tracking:</th>
<th>Appropriate for:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional pilot-in-command (PIC) line checks.</td>
<td>Failures of line checks.</td>
</tr>
<tr>
<td>Additional PIC line checks or second-in-command (SIC) line checks/observations.</td>
<td>Failures of proficiency checks or performance deficiencies due to unsatisfactory performance of routine line maneuvers/procedures/subject areas.</td>
</tr>
<tr>
<td>Additional proficiency checks.</td>
<td>Failures of proficiency checks or performance deficiencies due to unsatisfactory performance of abnormal/emergency procedures.</td>
</tr>
<tr>
<td>Additional flight training.</td>
<td>Performance deficiencies of training only maneuvers/procedures (e.g., low-altitude wind shear).</td>
</tr>
</tbody>
</table>

D. Duration of Tracking. The certificate holder’s procedures must specify that tracking of individual pilots will continue until the performance deficiencies and/or failures are effectively corrected. The certificate holder’s procedures should include the specific indicators the certificate holder will use to determine that the pilot has mastered the maneuver(s)/procedure(s)/subject area(s), in which he or she has previously demonstrated weakness. The timeframe of tracking may vary based on the performance deficiencies and failures and the individual pilot performance during remedial training and tracking.
3-19-14-9 RECORDKEEPING. In accordance with § 121.683, each certificate holder must maintain a record for each individual pilot to show compliance with the remedial training and tracking requirements of § 121.415(h) and (i). The record must include the instructor or check pilot certification required by § 121.401(c). (See Volume 3, Chapter 31, Section 3 for additional information, direction, and guidance on recordkeeping.)

RESERVED. Paragraphs 3-19-14-11 through 3-19-14-21.
VOLUME 3  GENERAL TECHNICAL ADMINISTRATION

CHAPTER 32  MANUALS, PROCEDURES, AND CHECKLISTS FOR 14 CFR
PARTS 91K, 121, 125, AND 135

Section 12  Safety Assurance System: Aircraft Checklists for 14 CFR Parts 121/135

3-3401  GENERAL. This section contains direction and guidance for principal operations inspectors (POI) for the review of aircraft checklists for Title 14 of the Code of Federal Regulations (14 CFR) parts 121 and 135 operators. All parts 121 and 135 operators must provide aircraft checklists to their flightcrew members. Flightcrew members are required to use these aircraft checklists in air transportation operations. For part 121 operators, aircraft checklists must be approved by the Federal Aviation Administration (FAA), and for part 135 operators these checklists must be acceptable to the FAA (see section 1 of this chapter for definitions of acceptance and approval). This section is related to Safety Assurance System (SAS) Element 2.2.1, Airmen Duties/Flight Deck Procedures.

A. Definition. A checklist is a formal list used to identify, schedule, compare, or verify a group of elements or actions. A checklist is used as a visual or oral aid that enables the user to overcome the limitations of short-term human memory. Although a checklist may be published in a manual, it is designed for independent use so that the user does not have to reference a manual. Checklists are used to ensure that a particular series of specified actions or procedures are accomplished in correct sequence. Aircraft checklists, in particular, are used to verify that the correct aircraft configuration has been established in specified phases of flight.

B. Standardization. Aircraft checklists and the operator’s policies for the use of checklists are one means by which operators structure and define flight crewmember roles. Research has shown that standardized procedures and effective cockpit communications are significant factors in flight safety. POIs must review the operator’s policies and procedures for checklist use as an integral part of the checklist review process. POIs shall ensure that checklists and the operator’s procedures for checklist use are standardized (to the extent allowed by individual aircraft differences) for all aircraft in the operator’s fleet.

C. FAA Approval or Acceptance for Specific Operators. POIs and operators must understand that aircraft checklists published in Airplane Flight Manuals (AFM) or Rotorcraft Flight Manuals (RFM) are not approved by the Aircraft Certification Office (ACO). When a part 121 operator proposes to use an AFM checklist, the POI must review and approve that checklist for that operator. When a part 135 operator proposes to use an AFM or RFM checklist, the POI must review the checklist and determine that it is acceptable for that operator’s use.

3-3402  CHECKLIST CONTENT. Aircraft checklists have traditionally been divided into three categories. For the purpose of this handbook, these categories are referred to as normal, non-normal, and emergency. Operators may use other titles for these categories, such as abnormal instead of non-normal. Operators may also further divide these categories into subcategories, such as alternate and supplemental. POIs shall use the following guidance when evaluating the content of an operator’s checklists.
A. **Content.** POIs shall ensure that aircraft checklists are limited to action items or verification items. The aircraft checklist should not contain elaboration or explanation. POIs must ensure that the required actions and decisions for flightcrews when performing a checklist are thoroughly described in the operator’s manual and training program. POIs will consider the following when evaluating aircraft checklist content:

1) Non-normal and emergency checklists must contain each sequential step of an FAA-approved procedure found in the AFM or RFM. POIs must contact the applicable Aircraft Evaluation Group (AEG) and obtain concurrence before approving the deletion of an item or the rearrangement/modification of items in these checklists.

2) A normal checklist is typically a listing of action items to be performed and verified at a particular point in flight. Normal checklist items do not necessarily represent a procedural step and may even represent completion of an entire procedure. For example, the item “Gear—Up and Locked” could indicate that the gear handle had been raised, the gear indications checked, the gear handle had been placed in the neutral position to check the up-locks, and the handle had then been returned to the up position. Most normal procedures do not require itemization or incorporation into a checklist. For example, the procedures for making normal takeoffs and landings are not itemized in a checklist format, but described in a narrative format.

B. **Criticality of Checklist Items.** Checklist items can be ranked in criticality according to the potential effect of the crewmember failing to perform the action. Critical items are those items which, if not correctly performed, have a direct, adverse effect on safety. Noncritical items are “housekeeping” items or systems management items, which for operating practices must be routinely accomplished during a specific phase of flight, but if omitted would have a minimal effect on safety. An item may be considered to be critical on one checklist but noncritical on another checklist. For example, a flightcrew’s failure to set the flaps while accomplishing the before takeoff checklist has had extremely adverse consequences. A flightcrew’s failure to retract the flaps while performing the after landing checklist, however, has had little effect on safety. The operator and POI shall analyze each phase of flight to identify critical items for that phase of flight and to ensure that all critical items are included on the checklist.

C. **Diversion of the Flightcrew’s Attention.** The flightcrew’s attention is diverted from other tasks when performing a checklist. Checklists must be kept as short as practical to minimize “heads-down” time and diversion of the crew’s attention while performing the checklist.

1) Each additional item that is added to a checklist increases the potential for interruption when the checklist is accomplished, diversion of the crew’s attention at a critical point, and the missing of critical items. Operators and POIs must weigh the benefit of including each item on a checklist against the possible adverse effects.

2) Items not associated with aircraft operations (such as calls to the company) shall not be placed on the checklist.

D. **Aircraft Sophistication and Checklist Design.** The degree of technological sophistication in the design of the aircraft directly affects checklist items. In older aircraft,
the flightcrew must manually select and monitor most items. In technologically advanced aircraft, the same items are accomplished and monitored by automatic systems that relieve the flightcrew of these tasks. Checklists for technologically advanced aircraft tend to be shorter and simpler than those for older aircraft. POIs shall ensure that the operator’s aircraft checklists are based on a careful task analysis of the operational requirements of the specific aircraft.

E. Fleet Standardization. POIs shall ensure that operators standardize checklist items and the sequence of items to the extent allowed by individual aircraft differences across all aircraft in the fleet. Checklists for technologically sophisticated aircraft are typically shorter and simpler than those for older aircraft. The items on checklists for technologically advanced aircraft, however, are normally present on checklists for aircraft with older technology. POIs shall require operators to evaluate the feasibility of placing common checklist items on checklists with standard titles for all aircraft (such as Before Start, before takeoff, or before landing checklists). Items should appear in a standard sequence to the degree possible. POIs should not normally approve placing an item on a checklist that is not required for that specific aircraft solely because the item is required in other aircraft of the fleet. POIs may make exceptions, however, when the operator provides adequate justification.

3-3403 METHODS OF CHECKLIST DESIGN. Operators may choose from at least two accepted methods of checklist design: the “challenge-do-verify” (CDV) method and the “do-verify” (DV) method. Available evidence suggests that safety is enhanced when the operator adopts and applies a consistent checklist design policy. POIs should use the following informative guidance when reviewing the design of an operator’s aircraft checklists.

A. “Challenge-Do-Verify.” The CDV method consists of a crewmember making a challenge before an action is initiated, taking the action, and then verifying that the action item has been accomplished. The CDV method is most effective when one crewmember issues the challenge and the second crewmember takes the action and responds to the first crewmember, verifying that the action was taken. This method requires that the checklist be accomplished methodically, one item at a time, in an unvarying sequence. The primary advantage of the CDV method is the deliberate and systematic manner in which each action item must be accomplished. The CDV method keeps all crewmembers involved (in the loop), provides for concurrence from a second crewmember before an action is taken, and provides positive confirmation that the action was accomplished. The disadvantages of the CDV method are that it is rigid and inflexible and that crewmembers cannot accomplish different tasks at the same time.

B. “Do Verify.” The DV method (or “clean-up” method) consists of the checklist being accomplished in a variable sequence without a preliminary challenge. After all of the action items on the checklist have been completed, the checklist is then read again while each item is verified. The DV method allows the flightcrew to use flow patterns from memory to accomplish a series of actions quickly and efficiently. Each individual crewmember can work independently, which helps balance the workload between crewmembers. The DV method has a higher inherent risk of an item on the checklist being missed than does the CDV method.

C. Selection of Design Method. Both the CDV and the DV methods of checklist design are currently being successfully used for normal checklists. Traditionally, operators have preferred the DV method for normal checklists and the CDV method for non-normal and
emergency checklists. Operators have, however, successfully used the CDV method for all
checklists. POIs may approve either method for normal checklists. In most circumstances,
non-normal and emergency checklists are more effective when the CDV method is used.
The correct accomplishment of the actions and procedures incorporated in the non-normal and
emergency checklist categories is critical and warrants a methodical approach. Since these
checklists are seldom used, however, crewmembers are usually not as familiar with the
procedures incorporated into these checklists as they are with the procedures in normal
checklists. In addition, many non-normal and emergency checklists do not lend themselves to
developing flow patterns that crewmembers can readily recall. The CDV method also enforces
crew coordination, cross-checking, and verification, all of which aid the crewmember in
overcoming the adverse effects of stress. POIs should not approve or accept the DV method for
non-normal or emergency procedures unless the operator can provide substantial evidence that
the method is effective for this application.

D. Mechanical or Electronic Checklists. Mechanical or electronic devices differ in
format from paper, hand-held checklists, but not in the design method or use. The actions these
checklists contain and their sequencing shall be consistent with the paper version (when
required) available to the flightcrew. Some electronic checklists will have an ability to
automatically detect the completion of an action based on switch position, system state, or both.
In electronic checklists, the verification in the CDV or DV methods may be a matter of
observing that the items are complete via the display method used (for example, completed items
turn green). The CDV or DV methods can be applied to any type of checklist. POIs should
encourage the use of such aids when operators find them effective.

E. Verification. POIs should keep in mind that all checklist designs are subject to
human error. Crewmembers may omit and skip checklist items. Crewmembers may erroneously
respond to a checklist at times believing that an item or task was accomplished when it was not.
At times, crewmembers may see what they expect to see rather than what has actually been
accomplished. Both the CDV and the DV methods are subject to such human errors. POIs must
ensure that operators have developed policies for using checklists that require stringent
cross-checking and verification to overcome these human limitations. These policies must be
compatible with the operator’s Crew Resource Management (CRM) philosophy. POIs shall
review the operator’s policies as an integral part of the review process.

3-3404 POLICIES FOR MANAGING THE ACCOMPLISHMENT OF CHECKLISTS.
POIs must ensure that the appropriate sections of the operator’s manuals contain the specific
crewmember responsibilities for monitoring, verifying, and managing the accomplishment of
checklists. These responsibilities should appear either as policy statements or as specific
directives. POIs should use the guidance that follows when evaluating an operator’s policies for
the accomplishment of checklists.

A. Objective of Policy Statements and Directives. The primary objective of the
operator’s policy statements or directives is to standardize crewmember interaction. These
statements should include, but not be limited to, the following items:
• Flightcrew responsibilities for maintaining aircraft control, analyzing situations, and for requesting the appropriate checklist in non-normal and emergency situations.
• The specified crewmember responsible for initiating each checklist.
• The specified time when each checklist is to be initiated.
• The specified crewmember responsible for accomplishing each item on the checklist.
• The specified crewmember responsible for ensuring that each checklist is completed and for reporting that completion to the crew.
• Crewmember responsibilities for bringing to the attention of the pilot-in-command (PIC) and the rest of the crew any observed deviation from prescribed procedures.

B. Methods for Managing Checklist Accomplishment. The following subparagraphs each contain a discussion of recommended methods an operator may use for managing checklist accomplishment. These methods are not all-inclusive and may not meet all of the operator’s needs. POIs shall not interpret these methods as the only ones that are acceptable.

1) For single-pilot aircraft, the FAA recommends that operators mount the before takeoff checklist and the before landing checklist on the instrument panel by means of a placard. When aircraft characteristics allow, the operator should develop touch-verification procedures that contain a requirement that the pilot touch each control to verify it is in the correct position.

2) For two-pilot aircraft in which only the PIC has ground steering control, the recommended method for accomplishing checklists is for the second-in-command (SIC) to read all checklists when the aircraft is in motion on the ground. The recommended method for those aircraft in which either pilot can steer on the ground is for the pilot not flying (PNF) to read all checklists. In all two-pilot aircraft, the PNF should read all checklists when the aircraft is airborne.

3) For three-crewmember aircraft, the recommended method is for the SIC to read the flight engineer (FE) portion of the before-engine-start checklist, so that the PIC can observe and verify the configuration of the FE panel as the FE responds to each item on the checklist. Since the PNF is the crewmember most subject to interruptions from radio communications, it is recommended that the FE should read all normal checklists and verify that each pilot action has been taken when the aircraft is in motion. The FE should have the explicit task of verifying that critical items have been performed by the pilots, whether or not the FE has verbal responses for those items. In those non-normal or emergency situations that involve significant activity by the FE, it is recommended that the PNF read the checklist and verify FE actions while the FE performs and responds to the items.

4) For all aircraft, the crewmember responsible for reading the checklist should be responsible for ensuring that the checklist is completed systematically and expeditiously. This crewmember should be responsible for managing interruptions, cross-checking controls and indicators to ensure that the required actions have been accomplished, and for reporting that the checklist has been completed.
5) The pilot-flying (PF) should not be distracted from controlling the aircraft to perform a checklist item that another crewmember can accomplish. The PF should activate only those switches or controls (other than the manual or automatic flight controls, throttles, and nosewheel steering) that are not within practical reach of another crewmember. Only one pilot should be “heads down” at any time.

6) In the prestart phase, flight guidance and navigation checklist items have proven to be critical items. A response should be required from both pilots (and FE, if applicable) when the same setting is required for more than one device (such as computers, flight instruments, and altimeters). Inertial platform alignment and computer programming should be accomplished by one crewmember and independently confirmed by another crewmember. As many of these checklist items as possible should be accomplished and verified before the aircraft is moved.

7) In the taxi and pretakeoff phases, aircraft configuration (such as flaps, trim, and speedbrakes) and flight guidance items (such as heading, flight director, altitude select panel settings, and airspeed bugs) have proven to be critical. All flightcrew members should confirm these items, and at least two crewmembers should respond to applicable checklist items.

8) On approach, flight guidance checklist items have proven to be critical items. At least two crewmembers should confirm and respond to these items. A response should be required from each pilot when the same setting is required on two separate devices (such as computers, flight instruments, or altimeters).

NOTE: One operator was able to reduce altitude deviations from an average of two per week to one per quarter by using stringent procedures for setting and verifying the altitude alerter.

9) All checklist items that are critical in the before landing phase vary with the type of airplane involved. In the operation of small airplanes, the landing gear has proven to be a critical checklist item, and both pilots should confirm and respond to this item. Although the landing gear and flaps are critical items for large, transport category airplanes, the multiple warning devices and systems that are associated with these systems make the need for a response and confirmation by both pilots less critical.

10) All checklists, except the after-takeoff and after landing checklists, should be accomplished by one crewmember reading the checklist items and a second crewmember confirming and responding to each item. POIs shall ensure that critical items on the before takeoff and before landing checklists are confirmed and responded to by at least two crewmembers.

11) All checklists must be designed so that the flightcrew can maintain an adequate visual scan and monitor air traffic control (ATC) communications while simultaneously controlling the aircraft. The recommended method is for the operator to group the systems management checklist items after the configuration, thrust, and flight guidance items for each phase of flight. When systems management checklist items must be accomplished in a high workload environment, it is recommended that they be accomplished by a single crewmember. Usually the after-takeoff and after landing checklists items can be accomplished silently as these
items have not proven to be critical. POIs should carefully evaluate the operator’s overall operation and experience before approving other checklists in which a single crewmember may accomplish a checklist.

12) Operators should direct crewmembers to refrain from accomplishing action items assigned to other crewmembers. Crewmembers should be directed that when they observe that another crewmember is not taking or has not taken a required action, they must inform the crewmember, the PIC, or the whole crew, as appropriate.

13) Checklists should not be depended on to initiate changes in aircraft configuration. Operators should key aircraft configuration changes to specific operational events. For example, the operator may direct the landing gear to be extended at glideslope intercept. For any adjustment of thrust or configuration, a command from the PF and an acknowledgement from the crewmember taking the action are required.

14) Flightcrew members frequently cannot complete a checklist when initiated, either because of an interruption or because an item on the checklist has not yet been accomplished. POIs shall ensure that each operator has developed policies for the management of these situations. For short delays, the recommended policy is for the flightcrew to hold the checklist until the interruption is over and the item can be completed. When the checklist item is completed, the challenge should be repeated, the proper response given, and the checklist continued. POIs shall not accept policies that allow flightcrews to skip checklist items that have not been completed and then to depend on memory to accomplish the item later. When a mechanical or electronic device allows checklist items to be accomplished in a random sequence, the POI may allow policies appropriate to the system used.

C. Checklist Interruptions. Operators must establish procedures to ensure that the correct checklist sequence is reestablished when unusual events interrupt the normal sequence of a flight. For example, crewmember actions during normal sequences of flights are interrupted when long delays are encountered on taxi-out or when crewmembers vacate the flight deck.

1) Vacating Flight Deck with Visitors in Cockpit. Operators must establish additional checklist management procedures for checklist interruptions that occur when any flightcrew member who is assigned to a flight deck duty station vacates the cockpit to perform other duties, leaving persons who are occupying cockpit observer seats or who visit the cockpit during such absence with unsupervised access to unmanned flight deck duty stations. If any checklist interruption of this kind occurs and any person, other than those specified in 14 CFR part 121, §§ 121.547(a), 121.583(a)(1) through (3), or part 135, § 135.85(a) and (f), has unsupervised access to an unmanned flight deck duty station, then each checklist item in all of the checklists prior to engine start must be reaccomplished.

2) POI Responsibilities. Part 121 POIs shall ensure that their assigned certificate holders conform to the policies described in this subparagraph. Part 135 POIs shall encourage their assigned certificate holders to conform to these policies.

NOTE: The following policies apply when interruptions of checklists occur before engine start; are caused by the vacating of an assigned flight deck duty
station by one or more flightcrew members to perform duties outside the flight deck; and any person, other than those specified in § 121.547(a), § 121.583(a)(1) through (3), or § 135.85(a) and (f), occupies a cockpit observer seat or has access to the cockpit during the flight crewmember’s absence.

3) Verification of Items Accomplished. The flightcrew must verify the accomplishment of all items on checklists that have been accomplished up to the point where the current checklist was interrupted.

a) Minimum Requirement. As each checklist item is reaccomplished, the minimum that is required is a verification that switches, control handles, knobs, or levers are in the positions prescribed and that the associated indicator lights and instrument readings confirm the proper positioning of the applicable switches, control handles, knobs, or levers.

b) Additional Requirements.

1. If the verification check reveals that any switch, control handle, knob, or lever is not in the position prescribed, then the full procedure, including any associated checks for the particular checklist item(s), must be reaccomplished.

2. If the indicator lights or instrument readings associated with the proper positioning of particular switches, control handles, knobs, or levers are not in agreement with the prescribed positions of these control means and reaccomplishment of the full procedure, including any associated checks for the particular checklist item(s), does not correct the disagreement, then the flightcrew must log the discrepancy in the aircraft maintenance log. The operator must either correct this discrepancy before the next flight or, if permitted, defer correction in accordance with the certificate holder’s approved minimum equipment list (MEL) procedures.

3-3405 DEVELOPMENT AND SEQUENCING OF CHECKLIST ITEMS. POIs must ensure that checklists are developed from a careful task analysis and are consistent with the procedures section of the operator’s flight manual. Phase checklist items must be in an appropriate and logical sequence. When a checklist represents an abbreviated procedure, that checklist must follow the procedural sequence. POIs should use the following additional guidelines concerning individual topics of checklist design.

A. Operators should standardize the sequence of checklist items as much as possible across aircraft types (see paragraph 3-3402, “Checklist Content”, subparagraphs D and E).

B. When the operator has a choice as to where an item should be placed on a checklist, it should be placed at a point where the crew workload is lowest.

C. Operators should keep checklists as short as possible in order to minimize interruptions. When an operator is using an electronic checklist with the ability to automatically detect the completion of an action, the POI shall encourage the use of that ability to the maximum extent possible.
1) Operators should sequence checklist items to minimize interruptions of checklist accomplishment. For example, sequencing the “INS NAV MODE” as the first item on the engine-start checklist may allow the flightcrew to call for and complete the before-engine-start checklist at a convenient time even though INS alignment is not complete.

2) Two short checklists may be preferable to a single long one. Operators may place a line or otherwise mark a checklist where the checklist can be held until a specific event occurs. This practice is acceptable because in essence, it creates two separate checklists.

D. Operators must include required preflight tests on checklists, but should design checklists to preclude the unnecessary testing of systems.

1) Warning systems with built-in test and automatic monitor circuits do not need to be checked or included on checklists unless required by the AFM.

2) Many test switches in the cockpit are designed for use by maintenance personnel. Operators should not require flightcrew members to perform these tests as a normal procedure.

3) With concurrence of the AEG, POIs may approve the operator grouping required functional checks on a specific checklist which is performed before the first flight of the day (or at some other logical interval) and not repeated on subsequent flights.

E. Operators must clearly identify decision points and indicate the correct alternative action or alternative sequence of actions to be taken after each decision point. If the effect of adverse weather requires an alternate action, the operator should design the checklist to account for that alternate action. For example, if the autothrottles are normally engaged for takeoff except when engine anti-ice is being used, the checklist should contain a requirement that the autothrottles cannot be engaged with the engine anti-ice on.

**3-3406 IMMEDIATE ACTION ITEMS.** Immediate action items are those items accomplished from memory by crewmembers in emergency situations before the checklist is called for and read.

A. A flightcrew’s failure to correctly accomplish all immediate action items can result in a threat to continued safe flight. For example, should a flightcrew fail to close the tank valve during an engine fire procedure, leaking fuel in the engine pylon may be ignited. In such cases, the first items on the corresponding checklist must be verification that each immediate action item has been accomplished.

B. In some cases, an immediate action procedure may not be incorporated in a checklist. For example, there is no point in verifying that each item of an aborted takeoff procedure has been accomplished after the aircraft has been brought to a stop. In most cases, however, there should be a “follow-on” or “cleanup” checklist to be accomplished after the situation has been brought under control.

C. Another example of an immediate action memory item is the following statement: “All flightcrew members shall immediately don O2 masks and report to the captain on interphone in the event of loss of cabin pressure.” In this example, the loss-of-cabin-pressure checklist
would contain the immediate action memory item and subsequent follow-on items to verify that each item has been accomplished.

3-3407 CHECKLIST TERMINOLOGY. POIs should ensure that the operator’s aircraft checklists contain terminology that is tightly controlled to ensure clarity and common understanding. The following recommendations should be considered by POIs when reviewing checklists:

A. The challenges and responses on the checklist should be consistent with the labeling on the switches and controls in the cockpit.

B. Terms such as “tested,” “checked,” and “set” are acceptable terms only when they are clearly defined and consistently used.

C. Operators should have a consistent policy concerning responses to items with variable settings. “As required” may be printed on the checklist, but should not be an authorized response. A response that gives the actual setting is normally appropriate. Items that require variable responses should be carefully evaluated. Such items may not actually be required on the checklist or may be more appropriately included in the system management portion of a checklist.

D. Responses to checklist items concerning liquid or gas quantities should be made in terms of the actual quantities on board compared to the specific quantity required, for example: “10,000 pounds required, 10,400 on board.” When specific quantities are required, a response of “checked” is not acceptable. A response of “checked” is acceptable when a range of quantity is permitted and the range is marked on an indicator, such as a green arc on an oil quantity gauge.

E. Excess verbiage on checklists should be discouraged. For example, a checklist item of “Reduce airspeed to 130 KIAS for best glide” can be abbreviated as “BEST GLIDE – 130 KIAS.”

F. Ambiguous verbiage on checklists is not acceptable. For example, “takeoff power” can mean either to advance the power or to retard the power.

3-3408 AIRCRAFT DIFFERENCES. POIs shall ensure that operators account in the aircraft checklists for differences in various series of aircraft or in installed equipment. When there are only a few minor differences, this may be accomplished by using symbols to designate those checklist items that apply to only one series of airplanes or that apply only when the equipment is installed. When there are a significant number of differences, operators should prepare separate checklists for each series of aircraft. Policies and procedures should be established to account for differences in checklist responses when operations are conducted with equipment removed or inoperative, in accordance with MELs and Configuration Deviation Lists (CDL).

3-3409 SEQUENCING NORMAL CHECKLISTS AND OTHER CHECKLISTS. Normal checklist items may be incorporated in non-normal or emergency checklists to simplify cockpit management. An acceptable alternative method is to require both the normal and non-normal or emergency checklists to be accomplished in a specified sequence. This method has the advantage of allowing the normal checklist to be requested and accomplished at the time that it would
normally be accomplished. Checklists should be designed so that two checklists are not in
progress simultaneously. The method may depend on the degree of sophistication of the airplane
involved. In technologically advanced aircraft with short, simple checklists, it is usually
preferable to keep the normal and the non-normal checklists separate. Some non-normal
checklist actions may be deferred until initiation of the appropriate normal checklist. In airplanes
with electronic checklists, checklists may be combined based on the priority of any one action,
and/or the deferred non-normal checklist items may be automatically inserted in the appropriate
normal checklist. In older airplanes, however, it may be necessary to add the normal checklist
items to the non-normal or emergency checklist simply to keep the checklist manageable.

3-3410 CHECKLIST FORMAT. POIs shall ensure that operators present checklists to
flightcrews in a practical and usable format. POIs should use the following guidance when
evaluating aircraft checklists for proper format.

A. Paper checklists should be protected either by plastic lamination or by being printed
on heavy, folded pasteboard stock.

B. Non-normal, alternate, and emergency checklists must be in a format that allows
crewmembers to quickly and accurately find the correct procedure while the crewmember is
under stress. To expedite the referencing of these checklists, a tabbed manual or other quick
reference format is recommended. When a paper checklist is required on the airplane,
the methods used in an electronic checklist and the associated paper checklist for referencing
a particular checklist shall be sufficiently similar to minimize flightcrew confusion or
inappropriate flightcrew response. The methods for accessing electronic checklists may
determine the format used to reference checklists in the paper version.

C. For single-pilot aircraft, the before takeoff checklist and before landing checklist can
be appropriately presented as placards on the instrument panel.

D. The type size and contrast used on a checklist is a compromise. A large type size is
preferred for legibility. A small type size is preferred to keep the number of checklist pages to a
minimum, which then further ease the locating of a specific checklist. The legibility of printed
material depends on the size of the letters, the spacing between letters, and the type of font used.
The following is offered as a suggestion to POIs for what to consider in evaluating the legibility
of checklists. This guidance must not be interpreted as being the only acceptable print size and
contrast that can be used for checklists:

- Checklist headings or titles—12 point type, all caps, boldface, and a plain
  (sans serif) font.
- Checklist text (challenge and response) and notes—10 point type, boldface, and a
  plain (sans serif) font.
- Contrast for headings or titles—either black print on white or reversed for
  emphasis.
- Contrast for text—black print on white.
- Colored borders for ease of identification—green for normal checklists, yellow
  for non-normal checklists, and red for emergency checklists.
NOTE: On airplanes with electronic checklists, these selections should be consistent with the display and symbology standards used by that system.

RESERVED. Paragraphs 3-3411 through 3-3425.
VOLUME 3 GENERAL TECHNICAL ADMINISTRATION

CHAPTER 33 CABIN SAFETY AND FLIGHT ATTENDANT MANAGEMENT

Section 6 Safety Assurance System: Operations—Cabin Safety

3-3546 SERVICE OF ALCOHOLIC BEVERAGES. The boarding of a passenger who appears to be intoxicated is a violation of Title 14 of the Code of Federal Regulations (14 CFR). This section is related to Safety Assurance System (SAS) Subsystems 5.1, Training and Qualifications, and 5.2, Cabin Operations.

A. Passenger Noncompliance. Passenger noncompliance with Federal Aviation Administration (FAA) safety regulations may result in interference with a crewmember. This is a violation of 14 CFR part 121 and may also be a criminal violation under Title 49 of the United States Code (49 U.S.C.) § 46318(a). Air carriers should have procedures in their manuals to ensure that crewmembers know what actions to take if a passenger does not comply with the safety regulations and/or interferes with a crewmember.

B. Part 121 Requirements. Part 121 requires air carriers to report passenger disturbances associated with alcohol within 5 business days. Due to safety implications, 14 CFR part 135 air carriers should also report these disturbances to the FAA within 5 days. The appropriate air carrier manuals should contain the crewmember procedures used to report these occurrences. The FAA suggests the following procedures:

1) The pilot in command (PIC) and/or the flight attendant (F/A) in charge of the cabin should fill out a report that, if feasible, both of them should sign.

2) The report should include:
   - The name and address of the individual;
   - A physical description of the individual;
   - The individual’s seat number;
   - The location of the individual’s boarding and destination;
   - Names, addresses, and phone numbers of witnesses;
   - Names, addresses, and domiciles of the other crewmembers; and
   - A brief narrative of the incident, the airline, flight number, and date.

3) This report, which will be in the air carrier and crewmember manuals, should be sent to the designated personnel.

C. Air Carrier Procedures. Air carriers should have adequate procedures contained in crewmember manuals and training programs outlining the specific duties of crewmembers and ground personnel regarding the use and service of alcohol. For example:

- Procedures to handle disturbances that may occur involving the service of alcoholic beverages;
• Procedures regarding the removal of a passenger who appears to be intoxicated; and
• Procedures to handle passengers who may have brought their own alcoholic beverages onboard.

3-3547 CARRY-ON BAGGAGE. As a result of the 9/11 terrorist attacks, the U.S. Congress passed the Aviation and Transportation Security Act. Section 122 of the Act, Sense of the Congress, clearly states its desire for the FAA to maintain its current restriction on carry-on baggage of one bag and one personal item. The Transportation Security Administration (TSA) Web site (www.tsa.gov) has information about items that are permitted and prohibited in carry-on baggage, as well as provides examples of what constitutes a personal item.

A. Carry-On Baggage Stowing Requirement. Part 121 prohibits an air carrier from closing the passenger entry door in preparation for taxi/pushback, or takeoff, unless each article of carry-on baggage is stowed in a suitable baggage or storage compartment or under a passenger seat.

B. Air Carrier Carry-On Baggage Restrictions. An air carrier may not allow the following:

1) The boarding of carry-on baggage unless each passenger’s baggage has been scanned to control the size and amount carried onboard in accordance with an approved carry-on baggage program. Additionally, no passenger may board an airplane if his or her carry-on baggage exceeds the baggage allowance prescribed in the air carrier’s approved program.

2) All passenger entry doors of an airplane to be closed in preparation for taxi or pushback, unless at least one crewmember verifies that each article of carry-on baggage is properly stowed. Baggage is neither properly stowed nor restrained unless the overhead bin door is closed and latched. The same requirements apply for stowing carry-on baggage before takeoff and landing.

3) Stowage of carry-on baggage or cargo that could hinder the use of any emergency equipment. Air carriers should provide suitable storage space for all required emergency equipment.

C. Stowage of Cargo and Baggage in Passenger Seats. When air carriers allow the stowage of cargo and baggage in passenger seats, they should include this information in their FAA-approved carry-on baggage program. The information about this practice should include:

• The types of cargo that may be restrained in the seat, and
• The location of the seat(s) where it may be stowed.

D. Stowage of Items in Seat Pockets. Seat pockets have been designed to restrain approximately 3 pounds of weight and not the weight of additional carry-on items. Seat pockets are not listed in the regulation as an approved stowage location for carry-on baggage. If a seat pocket fails to restrain its contents, the contents of the seat pocket may impede emergency evacuation or may strike and injure a passenger. If small, lightweight items, such as eyeglasses
or a cell phone, can be placed in the seat pocket without exceeding the total designed weight limitation of the seat pocket or so that the seat pocket does not block anyone from evacuating the row of seats, it may be safe to do so.

E. Stowing Carry-On Baggage Against a Passenger Class Divider or Bulkhead. Carry-on baggage may be stowed against a passenger class divider or bulkhead if both are stressed for inertia loads and the baggage is restrained from shifting by FAA-approved tiedown straps or cargo nets. A principal operations inspector (POI) must approve the stowage of carry-on baggage against the bulkhead or divider. The POI will coordinate this approval with the Aircraft Evaluation Group (AEG) and other elements within the FAA as needed. Carry-on baggage may be stowed in coat closets or other compartments that the FAA approves.

F. Stowing Carry-On Baggage, Cargo, or Trash in Uncertified Receptacles. The operation of an airplane with carry-on baggage, cargo, or trash stowed in uncertified receptacles, such as lavatories, is contrary to part 121 and the certification basis of the aircraft. If a receptacle in the cabin of the airplane, including the lavatory, is intended for the stowage of carry-on baggage, cargo, or trash, it must be shown to meet the applicable requirements in the airplane certification basis. These requirements include:

- The structural requirements pertaining to the restraint of the receptacle’s contents for flight, ground, and emergency landing load conditions, and
- Requirements pertaining to fire containment.

NOTE: The certification requirements are contained in 14 CFR part 25.

G. Part 121, § 121.589. Section 121.589 stipulates that each air carrier must have an FAA-approved carry-on baggage program. Carry-on baggage programs must comply with existing regulations.

1) A description of carry-on baggage articles must be in the program. This description should provide information about the types of articles which could be exempt from the carry-on baggage count. This could include such things as child restraints, canes, assistive devices for people who are physically challenged, articles of personal clothing, etc. Some air carriers believe that exempt articles do not have to be restrained. Therefore, information that all articles (including those exempt from the carry-on baggage count) must be properly restrained should also be stipulated in the carry-on baggage program.

2) Proper stowage of carry-on baggage is a major safety issue. The current edition of Advisory Circular (AC) 121-29, Carry-On Baggage, requests that airlines include a definition of “properly stowed” in their carry-on baggage programs. Ensuring that baggage does not interfere with emergency equipment is an important part of the information about proper stowage. In addition, nothing can be stowed in the seat pockets except magazines and passenger information cards. It is not a good safety practice to stow meals, either brought onto the airplane by passengers or served by the air carrier, in seat back pockets. The FAA considers meals carried on by passengers to be carry-on baggage. Even though meals may be exempt by the air carrier from the number of bags permitted, they still must be stowed in accordance with the regulations.
pertaining to carry-on baggage. Nothing may be stowed in the lavatories, unless lavatories meet all the requirements for approved cargo stowage areas.

3) The program should specify the crewmember position responsible for ensuring that carry-on baggage is properly stowed. While each crewmember should ensure that carry-on baggage procedures are followed, it is important that a specific crewmember be identified as responsible for ensuring that carry-on baggage is properly stowed for each cabin or each cabin area. Specific and clear crew assignments are an important part of safety.

4) Air carriers should provide information to passengers about their carry-on baggage programs. This information should include advice about the types of articles that should not be carry-on baggage. Many air carriers do this as part of their telephone announcements when reservations are made. In addition, some air carriers provide this information through public address (PA) announcements and signs at the airport. A variety of methods used by the air carrier are acceptable, but the public should be able to readily obtain the information.

5) Carry-on baggage programs should:

- Comply with existing regulations and applicable programs such as the FAA-approved Weight and Balance (W&B) program;
- Provide information about preventing baggage that cannot be stowed as carry-on baggage from reaching the aircraft as carry-on baggage;
- Ensure that carry-on baggage that is brought to the airplane, but not carried in the cabin, is assigned the same weight as other baggage carried in the cargo compartment;
- Define “carry-on baggage,” including those items that might be exempt;
- Provide information about size and number accepted;
- Define “properly stowed” to include overhead bin stowage and underseat stowage. For proper underseat stowage of carry-on baggage, there must be forward and side restraints to prevent bags from sliding into the aisle;
- Ensure that carry-on baggage does not interfere with emergency equipment, and that nothing is placed in front of or directly on top of emergency equipment;
- Address stowage of unusual articles such as musical instruments;
- Prohibit the stowage of carry-on baggage and other items in the lavatories and seat back pockets (the only items allowed in seat back pockets should be magazines and passenger information cards);
- Provide specific crewmember assignments for the verification that carry-on baggage is properly stowed;
- Address procedures in appropriate manuals;
- Provide crewmember training on carry-on baggage; and
- Ensure that information is available to the public about the air carrier’s carry-on baggage program.

6) Air carriers should use approved procedures to ensure compliance with their carry-on baggage program. These procedures should include the following items:
• Preboarding scanning to ensure that size and amount of passenger carry-on baggage is in accordance with the allowances prescribed in the approved carry-on baggage program;
• Closing and latching each overhead bin before all passenger doors are closed in preparation for taxi or pushback and before takeoff and landing;
• Closing, latching, or installing each restraint device for each cargo compartment located in the passenger cabin before all passenger doors are closed and before takeoff and landing;
• Stowing each piece of underseat carry-on baggage; and
• Removing all carry-on baggage that cannot be stowed properly in the passenger cabin before closing all passenger entry doors in preparation for taxi or pushback, and reloading it as checked luggage in a cargo compartment.

7) Each air carrier may decide if they will allow passengers to travel with their pets in the passenger cabin. If an airline does allow cabin pets, then the pet container is considered to be carry-on baggage and must conform to all carry-on baggage regulations.

• The pet container must be small enough to fit underneath the seat without blocking any person’s path to the main aisle of the airplane;
• In order for the airplane to leave the gate, the pet container must be stowed properly before the last passenger entry door to the airplane is closed;
• The pet container must remain properly stowed the entire time the airplane is moving on the airport surface, and for takeoff and landing; and
• Passengers must follow F/A instructions regarding the proper stowage of the pet container.

NOTE: Additional information on traveling with pets in the passenger cabin can be found on the FAA Cabin Safety Web site http://www.faa.gov/passengers/fly_pets/cabin_pets.

3-3548 STOWAGE OF NON-COLLAPSIBLE FLEXIBLE TRAVEL CANES. The Department of Transportation (DOT) issued an order of dismissal to certain complainants against a U.S. air carrier dismissing the complainant’s allegation that the air carrier violated 14 CFR part 382, which prohibits discrimination against qualified handicapped persons. The complainants, who are legally blind, alleged that the carrier’s failure to allow them to stow their long white flexible canes at their seat constituted unlawful discrimination under DOT rules.

A. Current DOT Rules. The current rules require air carriers to allow stowage of flexible canes near passengers in a manner consistent with FAA safety regulations.

B. Part 121 Requirements. Part 121 requires all carry-on items, other than articles of loose clothing, to be stowed in a suitable closet, baggage or cargo stowage compartment, including an overhead rack having doors or restraints, or under a passenger seat that is fitted with a means to prevent stowed articles from sliding forward in the passenger compartment or sideward into the aisle. In addition, part 121 allows flexible travel canes to be stowed:
1) Laterally under two or more connected passenger seats in the same row, if the cane does not protrude into an aisle and is flat on the floor.

2) Longitudinally between a non-emergency exit window seat and the fuselage, if the cane is flat on the floor.

3) Longitudinally beneath any two non-emergency exit row window seats, if the cane is flat on the floor.

4) In accordance with any other method the Administrator approves.

C. Proper Restraint of Items in the Event of an Emergency. The gist of part 121 is to ensure that all carry-on items are properly restrained in the event of an emergency. The FAA requires that passenger seats, under which baggage is allowed to be stowed, must be equipped with underseat restraints sufficient to prevent articles of baggage, including flexible travel canes and other thin profile items of baggage, from sliding forward. Also, aisle seats, under which the FAA allows baggage to be stowed, must be equipped with underseat restraints to prevent baggage from sliding forward. POIs and/or cabin safety inspectors (CSI), as applicable, must contact their assigned air carriers to:

- Inform them of these thin profile baggage restraint problems; and
- Require them to take action to ensure that the FAA-approved carry-on baggage program of each air carrier operating under part 121 has policies that ensure proper restraint of all carry-on baggage, including non-collapsible flexible travel canes.

3-3549 STOWAGE OF GALLEY SERVICE ITEMS. Section 121.577 prohibits an air carrier from moving on the surface, taking off, or landing an airplane when any food, beverage, or tableware furnished by the air carrier is located at any passenger seat. In an emergency situation requiring evacuation, litter from food service of any kind (including coffee and rolls) can be hazardous due to poor footing. Accordingly, part 121 prohibits serving any food or beverage, regardless of the type of containers used, during movement on the surface, takeoff, and landing. In addition, any food item or container that the passenger carries onboard the aircraft is considered to be carry-on baggage and must be properly stowed in accordance with part 121 for movement on the surface, takeoff, and landing.

A. Items to Secure During Surface Movement, Takeoff, and Landing. Part 121 also states that, during movement on the surface, takeoff, and landing, the following items must be secured in their stored positions (i.e., correctly positioned and fastened in their storage compartment and restraint means, if any):

- Passenger food and beverage trays,
- Serving carts, and
- Each movie screen that extends into an aisle.
NOTE: If there is a question regarding the stowage of a particular item, and it must be stowed for takeoff and landing, then that item must also be stowed for movement on the surface.

**B. Beverage and Food Service Procedures.** Air carriers may arrange to provide limited beverage and food service to their passengers when the aircraft is no longer moving on the surface (e.g., while the aircraft is stationary on a taxiway in a long queue awaiting takeoff). In such cases, the air carrier should have specific procedures for flightcrew members and F/As to follow, including coordination and communication between the flight deck and the passenger cabin(s), to ensure that these requirements are met before aircraft movement on the surface resumes.

**C. Galley Supplies Stowed Outside the Galley.** In addition, the FAA considers galley supplies stowed outside the galley to be cargo. These supplies must be stowed in accordance with part 121. If galley supplies or other cargo weighing over 20 pounds are placed under a seat, the FAA must approve the container or restraint, usually through a Supplemental Type Certificate (STC).

3-3550 **RETENTION OF ITEMS OF MASS.** Part 121 refers to galley equipment, serving carts, and crew baggage. However, the FAA did not intend to list all “items of mass.” Crewmembers must restrain any item that can become a hazard by shifting under the load factors of an emergency landing.

**A. Flightcrew Flight-Kits.** Particular attention should be given to compliance with part 121 regarding restraints for any baggage carried on the flight deck. Flightcrew flight-kits are not items of crew baggage. This policy also applies to aviation safety inspectors (ASI) and additional flightcrew members. While it is logical that flight-kits be placed so that movement is restricted, the FAA does not intend that they be restrained in a manner that would interfere with the needs and functions of the flightcrew.

NOTE: This is only applicable to flight-kits.

**B. Restraint of Serving Carts and Unused Galley Equipment.** It is recommended that air carriers include instructions to F/As that all serving carts, in addition to being stowed for takeoff and landing and when it is not in use, be properly restrained when in use but not being moved from one location to another. Air carriers should expand this policy to require restraint of all galley equipment (including supplies) that are not being used so that they will not become hazards during periods of in-flight turbulence.

3-3551 **POTENTIAL PROBLEMS ASSOCIATED WITH FOOD AND BEVERAGE SERVICE.**

**A. Hot Liquids Service Procedures.** Reports are received regarding passengers and F/As burned by the spillage of hot liquids. Air carriers should have procedures discontinuing service of hot liquids when turbulent air is encountered that is not severe enough for the F/As to discontinue all service. In addition, containers for hot liquids should have lids that can be securely closed. Additional service items and areas of concern that could cause injuries are:
• Carts with sharp corners or projections that may cause injury, and
• Brakes on the carts that are hard to operate, inadequate, or nonexistent.

B. Food and Beverage Container Hazards. When F/As carry food and beverage containers (bottles, glasses, trays, hot water and coffee containers, etc.) loosely on the cart and in turbulence, they may become dislodged and strike or scald passengers and crewmembers. Air carriers should have procedures for removing or securing loose items on the top of carts during turbulence.

C. Unattended Cart Regulations. F/As should not leave carts unattended. Air carriers should have procedures that ensure that F/As are no more than 10 feet (3 rows) away from the carts left in the aisles. F/As should not park carts out of their normal galley takeoff/landing positions unless they can be properly restrained. Some aircraft are equipped with restraint devices such as “mushrooms,” which will properly hold carts in other areas. When this is the case, F/As may leave them unattended. However, items should be cleared from the top of the carts. During a sudden directional change of the aircraft, items left unrestrained on the top of the carts can become dislodged and cause injuries.

D. Deficiency Reporting Procedures. Air carriers should have procedures for reporting cart and cart restraint deficiencies.

3-3552 PROBLEMS WITH LOWER LOBE GALLEYS.

A. Eliminating Electrical Equipment Safety Hazards. The FAA requires air carriers to provide instruction to F/As on electrical equipment and related circuit breakers located in the cabin area of aircraft, which includes all galleys, service centers, and lifts. A good understanding of the function of these circuit breakers could eliminate a problem before it becomes a safety hazard. Air carriers should assure that this subject is adequately covered in F/A training for all aircraft so equipped.

B. Prohibition of Passengers in Lower Lobe Galleys. The FAA received information concerning passenger access to the lower lobe galleys. They either let themselves down in the lifts or an F/A took them down. There is no justifiable reason for passengers to be in the galley, where they would interfere with the F/A duties. In addition, there is no provision for oxygen masks and safety belts for extra persons. Air carriers should incorporate into their manuals and training programs prohibition against passengers being allowed in the lower lobe. Hence, they should placard each lift.

C. Limit of Two F/As in Lower Lobe. Some air carriers have conducted training and/or instruction in the lower lobe during flight with five or six F/A trainees. They have also allowed deadheading crewmembers to occupy or visit the lower lobe during flight. Due to the number of oxygen masks and seat belts, only two F/As should be allowed in the lower lobe at any time during flight. One additional person may be allowed for instruction, evaluation, or inspection duties. In the event a third person is present in the lower lobe galley, oxygen must be available in the event of a decompression; this may require a portable oxygen bottle.
D. Communicating with Lower Lobe Galley Personnel. It is very difficult to hear the PA system announcements in the lower galley because of aerodynamic noise and other noise emitting from nearby systems. The F/A working in the galley may not hear the captain’s warning of clear-air turbulence or a 10-minute warning of descent. In addition, there have been reports of numerous failures of the intercom systems. Sometimes, F/As in the galleys rely on the other F/As to pass the warning. Air carriers should incorporate F/A procedures to assure that all warnings are passed to and acknowledged by persons in lower galleys.

E. Lower Lobe Emergency Procedures. En route inspections have revealed a nonconformity throughout the aviation industry in training and procedures for F/As who have to work in lower lobe galleys. Air carrier emergency procedures pertaining to the lower lobe should include procedures and training on the location and use of emergency equipment. The emergency procedures should also include the removal of an injured F/A in the lower section.

F. Minimum Equipment List (MEL) Incompatibility Between Aircraft. MELs between different aircraft (e.g., DC-10, L-1011, and B-747) are not always compatible. In one instance, if the personnel lift is inoperable, the F/As will not perform food servicing during flight. In another instance, if the personnel lift is inoperable, the F/As may go down to the lower galley, but the service is limited to a number of carts that can be delivered and stowed in the passenger cabin. In addition, F/As have sustained serious injuries caused by certain lift malfunctions that occurred during flight.

1) Air carriers should include procedures in their F/A manuals and training programs to assure that there are adequate instructions throughout their system on dispatching aircraft with inoperable personnel or cart lifts.

2) Air carriers should have procedures in the event these lifts become inoperable during flight. Further, assurance should be sought to determine that each air carrier is keeping F/As informed on conditions and procedures, which are set forth in the MELs that affect them.

G. Proper Stowage of Carts. Some airlines do not have a sufficient number of mushrooms in the cabin in order for crewmembers to “tie down” each serving cart in the event of turbulence. These carts can weigh up to 250 pounds and should be anchored when not being transferred to or from the cart lifts. Air carrier procedures and training should include instructions to F/As that all carts must be properly stowed for:

- Movement on the surface,
- Takeoff,
- Landing, and
- Whenever they are not being moved from one location to another.

H. Maintaining Mushroom-Type Restraints. The FAA has found some retractable “mushrooms” in lower galleys inoperable. They are either jammed in the down position or, when lifted to the up position, will fall back down when the cart is placed over it. The automatic brakes are insufficient to keep the carts from moving about during takeoff and landing. Air carriers should conduct inspections periodically in the lower lobe to see that the mushrooms are operable and that crewmembers adhere to procedures requiring each cart to be tied down or stowed.
Air carrier maintenance programs should ensure that mushroom restraints and other types of floor tiedowns are not worn down. The thickness and circular diameter must be maintained in order for the mushroom-type restraints to properly secure the cart.

3-3553 PREDEPARTURE CABIN EQUIPMENT CHECKS BY F/As. Some air carriers assign F/A tasks for making a predeparture check of the normal and emergency equipment in the passenger cabin.

   A. Predeparture Equipment Check Assignments. In reviewing this situation, the FAA found that in most cases, the F/As on wide-body aircraft have predeparture equipment check assignments. On other aircraft, flightcrew members and F/As sometimes share the predeparture check of passenger cabin normal and emergency equipment. In each case, the POI and/or CSI (as applicable) indicated that the F/As received training on the equipment and the operations manual contained appropriate procedures.

   B. Specific Tasks Assigned to F/As. When an air carrier elects to have F/As accomplish a predeparture check of normal and emergency equipment in the cabin, the POI and/or CSI (as applicable) should be fully aware of the specific tasks assigned to the F/As. These tasks should be reviewed to ensure that they are not in the areas which require an airman certificate. Appropriate initial and recurrent training is required to ensure F/As are properly qualified. Air carriers must also include adequate procedures and instructions in their manuals so that applicable personnel will be able to properly perform their assigned tasks.

   C. Flightcrew Member Training. The assignment of F/As by an air carrier to conduct a predeparture check of the cabin does not relieve the air carrier from training flightcrew members on normal and emergency equipment in the passenger cabin.

3-3554 PASSENGER BRIEFING ON FLOOR PROXIMITY LIGHTING. Briefing airline passengers regarding the presence of floor proximity lighting is a good safety practice and should be encouraged. Part 121 requires the installation of floor proximity emergency escape path marking. The purpose of this lighting is to provide emergency evacuation guidance for passengers when all sources of illumination, more than 4 feet above the cabin aisle floor, are totally obscured.

   A. Informing Passengers of Proximity Lighting. Many airline passengers are not aware of this lighting. Therefore, many air carriers include a statement about the lighting in the passenger briefing required by part 121 and depict it on the passenger information cards.

   B. Lighting Information in Passenger Briefing. Information that should be included in the passenger briefing includes the actual location of the lights, such as floor level or seat level. In addition, the briefing should include the change in pattern, such as color and/or design of the lights, that indicates the location of emergency exits.

3-3555 CABIN DOOR OPERATING MECHANISMS.

   A. Passengers Moving Door Operating Mechanisms. At times, passengers have consciously or inadvertently moved door operating mechanisms, even when the mechanisms were located under protective plastic covers. In at least one case, a passenger removed a plastic
cover before the door operating handle was moved. A handle that is moved during flight could accidentally cause an aircraft door to open during landing. In one situation, when a door opened, the slide was deployed. This was unsafe and caused considerable expense to the air carrier.

B. POI/CSI Responsibilities. POIs and/or CSIs, as applicable, should ensure that their assigned air carriers:

1) Inform crewmembers of the potential problem of, and the need to be alert to the possibility of, passengers moving an exit mechanism.

2) Have procedures for crewmembers to check the position of the door handles periodically during flight.

3-3556 FOKKER 28-4000 PASSENGER SAFETY INFORMATION CARDS.

A. Door Operation Depiction on Passenger Information Cards. The National Transportation Safety Board (NTSB) believes that there may be a problem with the door operation depiction on some Fokker 28-4000 passenger information cards. The NTSB requested that the FAA review the Fokker 28-4000 passenger information cards to ensure that they:

- Accurately show the procedure for operation of the two forward doors,
- Show the procedure for the removal of the overwing emergency exit handle cover, and
- Contain a warning to passengers that the plastic cover should only be removed in emergency situations.

B. POI/CSI Review of Passenger Safety Information Cards. Even though the passenger information cards are supplementary to the oral briefings required by part 121, POIs and/or CSIs (as applicable) assigned to air carriers operating the Fokker 28-4000 should review pertinent passenger safety information cards to ensure that they show the correct information. In the event that the cards are deficient, the proper information should be displayed when the cards are replaced.

3-3557 MISCELLANEOUS OPERATIONAL AMENDMENTS, AIR CARRIER CABIN SAFETY OPERATIONS PROVISIONS. In this rule, there are several amendments to parts 121 and 135 that affect the following areas of air carrier cabin safety operations:

- Safety belt security during movement on the surface;
- Stowage of service items during movement on the surface;
- Passenger information and passenger briefing provisions;
- Passenger compliance with signs, placards, and crewmember instruction; and
- Readiness of emergency evacuation assisting means.

A. Passenger Information.

1) Parts 121 and 135 require passenger information signs to be illuminated during any movement on the surface. In addition, these regulations require passengers to obey the
instructions of signs and placards and the instructions of crewmembers regarding these signs and placards.

2) Regulations require that:

- Passengers be briefed on prohibitions against smoking, and
- A statement be added to the pretakeoff announcement stating that Federal Aviation Regulations require passenger compliance with lighted passenger information signs and crewmember instructions concerning the use of seat belts.

B. Arming Doors. Part 121 requires that any time there are passengers onboard, one door must be ready for evacuation. If the jetway or stairs are pulled back, then at least one door must be armed (for example, for certain door slide/raft installations, the girt bar must be in place).

C. Movement on the Surface.

1) Parts 121 and 135 require that all service items (including food, beverage, tableware, beverage trays, serving carts, and movie screens) are in their stowed position for movement on the surface. If there is a question regarding the stowage of a particular item, and it must be stowed for takeoff and landing, then it must also be stowed for movement on the surface. It should be noted that air carriers may arrange to provide limited food and beverage service to its passengers when the aircraft is no longer moving on the surface (e.g., when the aircraft is stationary on a taxiway in a long queue awaiting takeoff or in the airport penalty box). In such cases, the air carrier should have specific procedures for flightcrew members and F/As to follow, including coordination and communication between the flight deck and the passenger cabin. This will ensure that these new requirements are met before aircraft movement on the surface resumes.

2) Parts 121 and 135 now require all occupants of an aircraft to be seated with their safety belts fastened during movement on the surface.

3-3558 USE OF A CHILD RESTRAINT SYSTEM (CRS) IN AIRCRAFT. This paragraph provides additional information on the use of a CRS in aircraft. This section is related to Safety Assurance System (SAS) Subsystems 5.1, Training and Qualifications, and 5.2, Cabin Operations. The FAA and the National Highway Traffic Safety Administration (NHTSA) have agreed upon a single government performance standard that will satisfy both aviation and highway safety requirements for CRSs (Federal Motor Vehicle Safety Standard (FMVSS) No. 213, and 49 CFR part 571, § 571.213). Information regarding most CRS manufacturers is maintained at the NHTSA Web site, http://www.safercar.gov/parents/CarSeats/Car-Seat-Ratings-Ease-Of-Use.htm. In addition, the FAA may approve an “aviation-only” CRS through a Technical Standard Order (TSO), a type certificate (TC), an STC, or approval under 14 CFR part 21, § 21.305(d) (2010 ed.) or approval under § 21.8(d).

A. Seat Occupancy Regulations. Part 121 requires that “during takeoff, landing, and movement on the surface of an airplane, each person on board shall occupy an approved seat or
berth with a separate safety belt properly secured about him or her. However, a person who has not reached his/her second birthday may be held by an adult who is occupying a seat or berth.”

B. Children Under the Age of 2. For taxi, takeoff and landing, an adult may hold a child under the age of 2 in their lap. However, because of the safety benefits, the FAA encourages the use of approved child/infant restraints aboard aircraft (for more information, refer to http://www.faa.gov/passengers/fly_children).

C. Accommodation of a CRS in an Empty Seat. Air carriers are encouraged to allow the use of an empty seat to accommodate a CRS. However, air carriers are under no obligation to allow a non-ticketed child to occupy an empty passenger seat, even if the child uses a CRS.

D. CRS Criteria. Air carrier personnel, specifically F/As, should be aware of the following items pertaining to CRSs meeting the criteria of 49 CFR part 571, § 571.213. The CRS should have:

- A solid back and seat;
- Internal restraint straps installed to securely hold the child to the CRS;
- A label stating that the FAA, a foreign government, or the United Nations (U.N.) has approved it for aviation use; and
- Instructions on the label that the user must follow (labels stating approval from a foreign government or the U.N. are allowed and therefore may vary).

E. Booster Seats. FMVSS No. 213 defines booster seats as seats not having backs. Based on this definition, the use of such automotive booster seats is not authorized in air carrier operation. Unfortunately, some manufacturers market and label their approved aviation child restraint seats as “booster seats,” even though these seats have backs. Thus, passengers can use aviation “booster seats” with backs and labeled “approved for aviation use” for all phases of flight, provided they follow the label instructions.

NOTE: Usually, parents and guardians can properly restrain children who fit in an automotive booster seat in an airline passenger seat without a CRS.

F. CRS Performance in Passenger Seats. In 1994, the FAA issued a study entitled “The Performance of Child Restraint Devices in Transport Airplane Seats.” The research for the study, conducted by the FAA Civil Aerospace Medical Institute (CAMI), involved dynamic impact tests with a variety of CRSs installed in transport category aircraft passenger seats. The FAA used the results of this study as the basis for prohibiting the use of the following devices during ground movement, takeoff, and landing. The CAMI study revealed the following observations:

1) Belly Belts. These devices attach the child to the accompanying adult. An abdominal belt attached to the adult’s seat belt restrains the child. During dynamic testing, the forward flailing of the adult and the child resulted in severe body impacts against the forward seat. The child Anthropomorphic Test Dummy (ATD) moved forward to impact the forward row seat back, followed by the adult ATD torso striking the child ATD. Then, the adult ATD torso
continued to move forward after contact with the child ATD, crushing the child ATD against the seat back.

2) **Harness Restraints.** The devices that CAMI tested consisted of a torso harness for the child ATD placed in its own seat with the airplane seat belt routed through a loop of webbing attached to the back of the harness. During dynamic testing, the devices allowed excessive forward body excursion, resulting in the test dummy sliding off the front of the seat with a high likelihood of the child’s entire body impacting the back of the seat directly in front of him or her. Then, elasticity in the webbing of the harness and seat belts pulled the ATD rearward and this rebound acceleration presented further risk of injury.

3) **Booster Seats.** A key concern for backless booster seats used in airplane seats is the combined effect of seat back breakover and impact of an adult seated behind the child. Booster seats may expose the child occupant to potential abdominal injury due to the combined effects of these forces.

**G. Design of a CRS Approved Through a TC, STC, Under § 21.305(d) (2010 ed.) or Under § 21.8(d).** Typically, a CRS that the FAA approves through the TSO process would be similar in design to a CRS that meets FMVSS No. 213 requirements. However, a CRS approved by the FAA through a TC, STC, under § 21.305(d) (2010 ed.), or under § 21.8(d) may contain novel and unusual design features (e.g., a harness-type device currently approved under § 21.305(d) (2010 ed.) that provides upper torso restraint for children). The regulations allow the use of a CRS that is a booster-type or vest- and harness-type, if the FAA has approved it through a TC, STC, TSO, under § 21.305(d) (2010 ed.), or under § 21.8(d). The air carrier is responsible for ensuring that crewmembers have proper training and information regarding the use of a CRS approved for use on aircraft through a TC, STC, TSO, or under § 21.305(d) (2010 ed.), or under § 21.8(d).

**NOTE:** Except for a CRS approved by the FAA through a TC, STC, TSO, under § 21.305(d) (2010 ed.), or under § 21.8(d), the following types of CRSs continue to be prohibited for use during ground movement, takeoff, and landing:

- Lap-held child restraint (commonly referred to as a belly belt);
- Vest- and harness-type device that attaches the child to the parent, the parent’s restraint system, or to the aircraft seat belt; and
- Booster-type child restraint (even though it may bear appropriate labels showing that it meets applicable U.N. standards or is approved by a foreign government).

**H. CRS Installation.** A parent or guardian must install a CRS in a forward-facing aircraft seat and in accordance with instructions on the label. This includes placing the child restraint in either a forward- or aft-facing direction in the passenger seat. A window seat is the preferred location; however, other locations may be acceptable, provided the CRS does not block any passenger’s (including the parent/guardian’s) access to the aisle used to evacuate the aircraft. A responsible adult should occupy a seat next to the child.

**I. CRS Installation with Inflatable Seat Belts.** A seat belt extender must always be used with a CRS installed in a seat with an inflatable seat belt. The seat belt extender will
deactivate the inflatable seat belt. Not using a seat belt extender with a child seat in a seat with an inflatable seat belt can result in death or serious injury.

**J. CRS Acceptance Regulations.** Parts 121 and 135 require air carriers to accept an approved CRS when the parent or guardian has purchased a ticket for its use.

1) These regulations require air carriers to ensure that the child is properly secured in the CRS, the CRS is properly secured in a forward-facing seat, the child does not exceed the weight limits of the CRS, and the CRS is approved and has the proper labels.

2) These regulations do not permit the use of belly belts, vest- and harness-type devices that attach to the parent or to the parent’s restraint system, or booster-type CRSs (even though some of these devices bear appropriate labels showing that they meet applicable U.N. standards or that a foreign government approved them).

3) If the parent or guardian supplies the approved CRS, the parent or guardian is primarily responsible for ensuring that the CRS is approved, that the child is the right size and weight for the CRS, and that the CRS is properly installed in a forward-facing passenger seat. In this case, F/A responsibility is limited to checking with the child’s parent or guardian to ensure that the CRS and the child have met the above conditions, that the child appears to be properly restrained in the CRS, and that the CRS appears to be properly installed in the passenger seat. Finally, it is the responsibility of the parent or guardian to ensure that the CRS is free of any obvious defects and functions properly.

4) In cases where the air carrier supplies the approved CRS, properly trained personnel should ensure that the CRS is free of any obvious defects and functions properly. The trained personnel should also ensure that:

- The child does not exceed the weight limits of the CRS;
- The child is properly restrained in the CRS; and
- The CRS is properly installed in a forward-facing passenger seat.

5) No air carrier may prohibit a child from using an approved CRS when the parent or guardian purchases a seat for the child, a parent or guardian accompanies the child, and the child is within the weight limits for the CRS. If an approved CRS, for which a parent or guardian has purchased a seat, does not fit in a particular seat on the aircraft, the air carrier has the responsibility to accommodate the CRS in another seat in the same class of service. The following are examples of design variations where accommodation is required:

   a) A crewmember can move a CRS with a base that is too wide to fit properly in a seat with rigid armrests to a seat with moveable armrests that can be raised to accommodate the CRS in the same class of service.

   b) A crewmember can move an aft-facing CRS that cannot be installed properly because of minimal pitch (distance between seats) between rows to a bulkhead seat or a seat in a row with additional pitch in the same class of service.
c) A crewmember can move a harness-type CRS (approved under § 21.305(d) (2010 ed. or § 21.8(d)) with an upper strap that is not able to encircle some sleeper seats or very large first class seats, to another seat that can accommodate the strap in the same class of service.

d) There are some aft-facing CRS that have a detachable base that may keep the CRS from fitting properly in the seat. The following visual cues will assist the passenger and the aircraft operator to determine if the detachable base is necessary:

- If there is no belt path on the aft-facing CRS, then the passenger must use it with the detachable base on aircraft.
- If there is a belt path on the aft-facing CRS and the CRS is properly labeled, then the passenger does not need to use it with the detachable base on aircraft.
- FMVSS No. 213 labeling standards do not require labeling on the detachable base.

NOTE: F/A training and procedures should emphasize that the regulations require an air carrier to accommodate an approved CRS for which a parent or guardian has purchased a seat in the same class of service.

K. Effective Air Carrier Practices. The following are effective practices that an air carrier may consider in its training and procedures regarding CRSs:

- The air carrier’s training program should cover the use of CRSs;
- The parent or guardian should secure the CRS to a regular passenger seat at all times or stow it as carry-on baggage, if not in use;
- During an emergency evacuation, the CRS should remain attached to the passenger seat, and only the child should be removed from the aircraft;
- No other passenger may occupy the same passenger seat with the CRS;
- The regulations do not allow a passenger to use a CRS in sideward-facing passenger seats; and
- The child should always be properly secured in the CRS whenever other passengers are required to have their safety belts fastened.

L. CRS Placement for Passengers Traveling with Multiple Children. In the event that a parent or guardian is traveling with more than one child in a CRS or is traveling with several small children, only one of whom is occupying a CRS, crewmembers should use good judgment regarding placement of the CRS. At a minimum:

- The CRS should be placed so that it does not block any passenger’s (including the parent or guardian’s) access to the aisle used to evacuate the airplane; and
- The CRS should be placed so that the parent or guardian can reach the child in the CRS to release and evacuate with the child, should an emergency evacuation be necessary.
NOTE: As long as the CRS meets the above conditions, this may result in the parent or guardian placing the CRS between a passenger (including him or herself) and the aisle and/or placing the CRS in a seat other than a window seat.

M. CRS for Larger Children. The majority of individuals who use CRSs on commercial aircraft are young children who typically weigh 40 pounds or less. However, there are some individuals who, because of physical challenges, need the support and security that a restraint system provides in order to travel safely on aircraft. Parts 91, 121, 125, and 135 contain the scope of the CRS regulations, which apply to any child (i.e., under age 18) who does not exceed the specified weight limit for a CRS and is properly secured in a CRS that bears the proper labels.

1) Air carriers should ensure that F/As are aware that larger children (who have not reached their 18th birthday) may use a properly approved CRS that is appropriate for the child’s size and weight. In this case, the air carrier may not prohibit the use of the CRS.

2) There are several companies that manufacture CRSs approved for use on aircraft that are specifically designed for larger children who are physically challenged. The NHTSA maintains a list of information regarding some of those manufacturers (http://www.safercar.gov/parents/CarSeats/Car-Seat-Ratings-Ease-Of-Use.htm).

NOTE: No air carrier may prohibit the use of a CRS by any child under the age of 18 as long as the CRS is properly labeled, the child does not exceed the specified weight limit of the CRS, and the child is properly secured in the CRS.

N. CRS for Adults with Physical Challenges. In the case of an adult (i.e., 18 years old or older) who, because of physical challenges, needs the support and security that a restraint system provides in order to travel safely on aircraft, the individual or the air carrier (on the individual’s behalf) may request an exemption to § 121.311(b). There are several companies that manufacture restraint systems for adult use.

1) To find out how to submit a petition for exemption, go to http://www.faa.gov/regulations_policies/rulemaking/petition.

2) Exemption information is available for your review on the FAA’s Automated Exemption System (AES) Web site. To review previously granted exemptions regarding this issue, go to http://aes.faa.gov and enter “121.311” in the search field under “Regulation.”

O. TSO-C100c, Aviation Child Safety Device (ACSD). On April 6, 2012, the FAA published TSO-C100c, Aviation Child Safety Device (ACSD), which contains minimum performance standards that a CRS must meet in order to obtain approval and to be identified with the applicable TSO marking. The FAA published the TSO for review and comment prior to its adoption. Access this TSO at http://www.airweb.faa.gov/Regulatory_and_Guidance.Library/rgTSO.nsf/0/14280BE2D4385A92862579E40047815B?OpenDocument.
P. Labeling/Marking Requirements. Current operating rules in parts 91, 121, 125, and 135 require that CRSs used on aircraft during ground movement, takeoff, and landing meet one of the following labeling or marking requirements:

1) The CRS must bear two labels, although the manufacturer typically merges the text for these two required labels onto one label. The labeling must include the text, “This CRS conforms to all applicable Federal Motor Vehicle Safety Standards” and “This Restraint is Certified for Use in Motor Vehicles and Aircraft” in red lettering.

2) The CRS must bear either a label showing approval of a foreign government or a label showing that the CRS was manufactured under the standards of the U.N.

3) The CRS must bear a label or markings showing FAA approval through an STC.

4) The manufacturer must permanently and legibly mark CRSs approved under TSO-C100c, “TSO-C100c.”

5) CRS showing FAA approval under § 21.305(d) must bear the label “FAA Approved in Accordance with 14 CFR 21.305(d)” or “FAA Approved in Accordance with 14 CFR 21.305(d) (Amdt. 21-50 9 Sept. 1980).”

Q. Seat Dimensions Disclosure. Consistent with the FAA Modernization and Reform Act of 2012, § 121.311(k) requires air carriers conducting part 121 domestic, flag, and supplemental operations to make available on their Web sites the width of the narrowest and the widest passenger seats in each class of service for each airplane used in passenger-carrying operations. This rule facilitates the use of a CRS onboard an airplane and provides greater information to assist a caregiver to determine whether a particular CRS will fit in an airplane seat.

1) “Class of service” is the most relevant break point for information disclosure as it remains the prevailing terminology used to distinguish seat products, including the seat size variations and amenities that are associated with those products. The DOT defines “class of service” to mean seating in the same cabin class such as First, Business, or Economy class, or in the same seating zone if the carrier has more than one seating product in the same cabin (e.g., Economy and Premium Economy class or seats that are wider or have more legroom that are available at a higher cost to passengers). Because no certificate holder may prohibit a child from occupying a CRS if the child holds a ticket for an approved seat, the agency has stated that the aircraft operator need only accommodate the CRS in another seat in the same class of service.

2) Based on safe operating practices, an operator may have policies that establish certain seat locations for passengers who use a CRS on specific aircraft. Even if a certain seat can accommodate an approved CRS, an operator does not have to permit the CRS in that location if the operator’s policies disallow the CRS in that seat. However, prohibiting the use of a CRS (if a ticket has been purchased) when there are seats on the aircraft where the CRS could be used safely is not consistent with the requirements stated in part 121. As an operator determines how best to meet the requirement of § 121.311(k), it would be beneficial to the air carrier, and
would help facilitate the use of a CRS onboard an airplane, if the air carrier only provides seat
widths for seats that an air carrier allows for CRS use.

3) In addition to the seat width information required by § 121.311(k), the FAA
encourages air carriers to include information on their Web sites about their operational policies
and limitations regarding the placement of a CRS in a specific seat or location on their aircraft.
For example, if an air carrier prohibits a CRS in aisle seats, it would be beneficial to list this on
the air carrier’s Web site because it would provide greater information to a caretaker when
choosing assigned seats and determining whether a particular CRS will fit in a particular airplane
seat.

3-3559 USE OF NON-APPROVED CHILD/INFANT RESTRAINT SYSTEMS IN
AIRCRAFT. The regulations that are contained in § 121.311 prohibit the use of certain types of
CRSs during ground movement, takeoff, and landing.

A. CRS Regulations During the Cruise Portion of Flight. During the cruise portion of
the flight, however, there is no regulatory prohibition regarding the use of any type of child
restraint, including those that are prohibited from use during ground movement, takeoff, and
landing.

B. Nonapproved CRS Use During the Cruise Portion of Flight. There is also no
regulatory requirement that an air carrier permit the use of non-approved CRSs during the cruise
portion of flight. If an air carrier decides to implement an operational policy that is not
inconsistent with the regulations, they have the operational flexibility to do so.

3-3560 DOOR/SLIDE ARMING. Crewmembers should be able to evacuate passengers from
an aircraft whether it is moving on the surface or parked at the gate.

A. Arming an Exit After Retraction of Stairs or Jetway. In accordance with existing
regulations, air carriers must have procedures to ensure that immediately after the stairs or
jetway are pulled back from the airplane, at least one floor level exit is armed. At least one air
carrier has expressed concern that this practice could result in an evacuation where the slide
would inflate and perhaps hit someone on the ground. If this concern is of primary importance to
an air carrier, then the air carrier should have a policy that ensures that all ground vehicles are
out of the possible “slide strike” area before the jetway or stairs are pulled back.

B. When to Arm Doors. In the past, the requirements stipulated that the crewmembers
must arm doors before the pilot taxied the aircraft. However, the present requirements mandate
that crewmembers arm each floor level exit before movement on the surface. The ideal time to
arm the doors is immediately before the aircraft begins to move. Procedures to arm doors
simultaneously with the start of pushback are also acceptable.

3-3561 PASSENGER SEAT BELT DISCIPLINE. Passengers unfastening their seat belts
when the seat belt sign is illuminated concerns the FAA. The regulations require air carriers to
illuminate the seat belt sign:

- Before movement on the surface;
- During takeoff and landing; and
At any other time when considered necessary by the PIC.

A. “Fasten Seat Belt” Sign Regulations. Regulations also require all passengers to occupy their seat, with their seat belt fastened, when the seat belt sign is illuminated and to comply with crewmember instructions regarding the “Fasten Seat Belt” sign.

B. Seat Belt Sign Announcement Requirements. When the seat belt sign is turned on, crewmembers should make an announcement. The announcement should emphasize that when the seat belt sign is illuminated, regulations require passengers to fasten their seat belts. In addition, as long as the sign is illuminated, crewmembers should periodically remind passengers that the seat belt sign is lighted. Crewmembers should make additional and forceful announcements if passengers stand and the seat belt sign is illuminated, especially during turbulent air operations.

C. Seat Belt Sign Announcement Before Landing. Many passengers regard the illumination of the seat belt sign prior to landing as a signal to prepare for landing by going to the lavatory, standing, or stowing baggage. This is not a safe practice. Some crewmembers have adopted the desirable practice of making an announcement before turning on the seat belt sign for landing. They announce that:

- The flight will be landing shortly; now is the time to go to the lavatory or move about the cabin, and
- Once the seat belt sign is illuminated, passengers should be in their seats with their belts fastened.

D. Safety Problems Due to Passengers Standing During Taxi. Historically, most airlines ensured that passengers were seated during movement on the surface. However, during the 1980s, at least one airline allowed its aircraft to be taxied with passengers standing. The FAA Administrator defined this practice as a careless and reckless operation. The FAA filed violations and the courts upheld them. Therefore, the FAA incorporated into 14 CFR the requirement that the seat belt sign must be turned on prior to movement on the surface. This does not mean that pilots must stop an aircraft when a passenger stands. Pilots must weigh the safety alternatives before determining if it is appropriate to stop an airplane because a passenger stands up during taxi. Pilots may elect to stop the aircraft when it is pulling up to a gate and several passengers stand. However, there may be other times when stopping the aircraft could cause a more serious safety problem.

E. Seating All Passengers Before the Loading Door is Closed. The regulations do not require all passengers to be seated before the passenger loading door is closed. Requiring passengers to be seated before the passenger loading door is closed is one way air carriers have chosen to obtain passenger compliance with the lighted seat belt sign. This is a good practice, but not one that the FAA requires.

F. Announcement for Keeping Seat Belts Fastened While Seated. Crewmembers must make an announcement when the seat belt sign is turned off in flight that passengers should keep their seat belts fastened when seated. The POI and/or CSI (as applicable) should emphasize the requirement for this announcement. In addition, POIs and/or CSIs (as applicable) should
encourage air carriers to establish additional procedures to emphasize the importance of passengers wearing their seat belts at all times when seated. These procedures could include:

- Additional announcements,
- Video presentations, and
- Articles in air carrier publications or pamphlets in seat pockets.

**G. Announcement Techniques for Forewarning Passengers.** POIs and/or CSIs (as applicable) should encourage air carriers to use announcement techniques that serve to forewarn passengers of pending situations that will require them to comply with the seat belt sign when it is illuminated. Examples of these situations include expected turbulence and approaching destination. These techniques should be designed to preclude any passenger movement once the seat belt sign is illuminated.

**H. Standup Bar Regulations.** Standup bars on wide-bodied air carrier aircraft have caused considerable concern for the safety of passengers when turbulence is encountered. On occasion, both passengers and F/As have disregarded the seat belt sign when it was turned on and continued to congregate near the bar. This results in a potentially hazardous situation, not only for those passengers standing, but also for others seated in the area adjacent to the bar. From a safety viewpoint, whenever the seat belt sign is on, all passengers, including those in the vicinity of the standup bar, should be secured in their seats. Air carriers having standup bars installed in their aircraft should issue suitable instructions for F/As regarding seat belt discipline procedures.

### 3-3562 FLIGHT AND CABIN CREWMEMBER COORDINATION, COMMUNICATION, AND SAFETY DURING POTENTIALLY HAZARDOUS CONDITIONS OF FLIGHT

A review of aircraft accidents/incidents and cabin en route inspection reports indicates that there is a need for better communication between flight and cabin crewmembers. Also, there is a need for better seat belt discipline from passengers and F/As.

**A. Potential F/A Injury.** Due to the nature of their cabin duties, F/As are susceptible to turbulence-related injuries. Close coordination between flight and cabin crewmembers can facilitate the timely completion of cabin services and preclude the exposure of F/As to potential injury during known or anticipated encounters with turbulence.

**B. PIC Responsibilities.** During flight, the PIC is responsible for the safety of passengers and crewmembers. Therefore, the PIC should ensure that:

- The cabin crewmembers complete their safety duties as appropriate for each phase of flight;
- During takeoff and landing, the F/As are seated at their duty station with safety belts and shoulder harnesses fastened; and
- During movement on the surface, unless performing safety-related duties, F/As must sit with safety belts and shoulder harnesses fastened.
C. Flightcrew Responsibilities During Emergency Conditions. During emergency conditions, the flightcrew is primarily responsible for maintaining control of the airplane. However, as conditions permit, the flightcrew should brief the F/As on the nature of the emergency, the approximate amount of time for cabin preparation, and the contemplated course of action. This will enable the F/As to more effectively carry out their duties.

D. Crewmember Training. Air carriers should be reminded that it is advisable to make a PA announcement to remind passengers that Federal regulations require them to fasten their seat belts when the seat belt sign is turned on. Additionally, §§ 121.415 and 121.417 specify that training programs must ensure that each crewmember remains adequately trained. The training program should include:

- Instruction on coordination among crewmembers in abnormal/emergency situations, and
- Review and discussion of previous aircraft accidents and incidents pertaining to actual emergency situations.

E. Coordination and Communication Between Flight and Cabin Crewmembers. Coordination and communication between flight and cabin crewmembers during all phases of flight concerns the FAA. The FAA requests that POIs review their assigned air carrier’s training program and operational manuals to ensure that the air carrier establishes a safe and effective means of coordination and communication between the flight and cabin crewmembers. POIs should address the following operation, coordination, and communication procedures:

1) Guidance to flightcrew members on the importance of a predeparture briefing of the senior F/As, which includes forecast turbulence-related weather conditions, scheduling of cabin services, cleanup, securing of galley and cabin, carry-on baggage, and passengers.

2) Use of the PA system to alert F/As and passengers of anticipated in-flight turbulence.

3) Guidance for notifying F/As when they are to cease in-flight services, secure the galley, sit with their restraints fastened, and/or resume duties.

4) Standardized notification from the cabin crew to the flightcrew when the cabin crew completes all pretakeoff and prelanding duties and the cabin has been secured.

5) Standardized pretakeoff and prelanding signals from the flightcrew, which the flightcrew uses to allow sufficient time for F/As to be seated.

3-3563 BRACE-FOR-IMPACT POSITIONS.

A. Brace-for-Impact Research and Tests. The Protection and Survival Laboratory of the Aeromedical Research Branch of the CAMI has conducted research and tests with respect to establishing “brace-for-impact” positions for passengers and F/As.

B. Establishing the Best Brace-for-Impact Position. In order to establish a best brace-for-impact position for each person, it would be necessary to know the size and physical
limitations of the individual, the seating configuration, the type of emergency, and many other factors.

C. Reasons for Bracing for Impact. There are two primary reasons for bracing for impact:

1) To Reduce Flailing. Having the occupant flex, bend, or lean forward over their legs can reduce flailing.

2) To Reduce Secondary Impact. Repositioning the body (particularly the head) against the surface it would strike during impact can reduce secondary impact.

D. Seat Pitch Spacing. Today’s aircraft may have seating arrangements that result in very small seat pitches (the space between seats) or a combination of small and large seat pitch spacing (i.e., an aircraft with a first class/coach seating arrangements). Also, amendments to part 121 have upgraded the airworthiness standards for F/A seats, including the requirement for shoulder harnesses. In view of this information, this provides the best possible information for most emergency situations.

E. Passenger Brace-for-Impact Positions. Passengers should take a brace position in one of several ways. In all cases, the seat belt should be worn, as tight and as low on the torso as possible.

1) In aircraft with low-density seating or seats spaced relatively far apart, passengers should rest their head and chests against their legs, as depicted in Illustration A or B of Figure 3-125, Brace Position in Aircraft with Low-Density Seating or Seats Spaced Relatively Far Apart. Passengers can reduce flailing by grasping their ankles or legs, as depicted in Illustration A, or if they are unable to do that, wrapping their arms under their legs, as depicted in Illustration B. Their heads should be face down in their laps, and not turned to one side.

   Figure 3-125. Brace Position in Aircraft with Low-Density Seating or Seats Spaced Relatively Far Apart

2) In aircraft with high-density seating or in cases where passengers are physically limited and are unable to place their heads in their laps, they should position their heads and arms against the seat (or bulkhead) in front of them, as depicted in Figure 3-126, Brace Position in Aircraft with High-Density Seating or Where Passengers Are Physically Limited.
Figure 3-126. Brace Position in Aircraft with High-Density Seating or Where Passengers Are Physically Limited

3) Passengers in aft-facing seats should rest their heads on the seat back (or bulkhead) behind them as depicted in Figure 3-127, Brace Position for Passengers in Aft-Facing Seats. The passengers should not place their hands behind their heads, as has been recommended in the past. Rather, passengers should either place their hands in their laps or grasp the side of their seats.

Figure 3-127. Brace Position for Passengers in Aft-Facing Seats

4) Passengers should place their feet flat on the floor and slightly in front of the edge of the seat.

5) Passengers should not use pillows or blankets between their bodies and the object they are bracing against (either a seat back or their own body). Pillows and blankets provide little, if any, energy absorption and increase the possibility of secondary impact injury. Also, pillows and blankets could create additional clutter in the aisles which could be a detriment in an emergency evacuation.

6) Children that occupy approved child restraint devices should be braced in accordance with the manufacturer’s instructions. Children in passenger seats should utilize the same brace position as adults. Adults holding infants should provide uniform support to the infant’s head, neck, and body and lean over the infant to minimize the possibility of injury due to flailing.

7) Pregnant or handicapped passengers may or may not need the assistance of another person in taking a brace position, but should, in general, attempt to take the same brace...
position as the other passengers. If aft-facing passenger seats are available, these passengers may benefit from being located at those seats.

**F. F/A Brace-for-Impact Positions.** The brace positions for F/As will depend on the direction their seats face and the type of restraint system those seats are equipped with.

1) In forward-facing seats equipped with an inertial reel shoulder harness, F/As should sit back in the seat, as depicted in Figure 3-127, and rest their chin on their sternum, as depicted in Figure 3-128, Brace Position with Chin on Sternum. If the seats are equipped with noninertial reel-type shoulder harnesses, F/As should fasten their shoulder harnesses as tight as possible, lean against them, and rest their chins on their sternums as depicted in Figure 3-128. F/As should position their arms and hands in their laps or hold on to the side of their seats, but they should not hold onto their restraint systems.

**Figure 3-128. Brace Position with Chin on Sternum**

2) In rear-facing F/A seats, the F/As should sit back in their seats, rest their heads against their seat backs or headrests, and have the restraint systems (inertial or noninertial type) as tight as possible, as depicted in Figure 3-127. They should not clasp their hands behind their heads, but position them as in a forward-facing seat.

**G. Helicopter Brace-for-Impact Positions.** Helicopter brace-for-impact positions are the same as those for airplanes. F/As, if present, should utilize either the brace position for passengers or F/As depending on their seats and restraint systems.

**H. Briefing Passengers on Brace-for-Impact Positions.** In the case of an anticipated emergency landing, passengers should be briefed on the above information. In the case of an unanticipated emergency, F/As may only have enough time to give a short command, such as “Lean over,” or “Grab your ankles.” Experience has shown that in an attempt to take a brace position of some sort, passengers will end up in a position that could result in less injury than if they make no attempt at all.

**I. Bracing Information in Crewmember Training.** The air carrier’s crewmember emergency training program should contain bracing information appropriate to the aircraft and seat spacing used by that air carrier.
3-3564  EMPHASIS ON TIME MANAGEMENT AND CREW COORDINATION IN PREPARATION OF CABIN FOR IMPENDING EMERGENCY LANDING.

A. Background. On July 19, 1989, a DC-10-10, N1819U, operated by United Airlines, Inc. (UAL) as Flight 232, experienced a catastrophic failure of the number 2 tail-mounted engine during cruise flight. The separation, fragmentation, and forceful discharge of stage 1 fan rotor assembly parts from the number 2 engine led to the loss of the three hydraulic systems that powered the airplane’s flight controls. The flightcrew experienced severe difficulties controlling the airplane, which subsequently crashed during an attempted landing at Sioux Gateway Airport, Iowa. There were 285 passengers and 11 crewmembers onboard. One F/A and 110 passengers were killed.

B. NTSB Recommendation A-90-173. The NTSB investigation resulted in recommendations to the FAA. They included recommendation A-90-173: Issue an Air Carrier Operations Bulletin for all air carrier flightcrew training departments to review this accident scenario and reiterate the importance of time management in the preparation of the cabin for an impending emergency landing.

C. POI and CSI Training Responsibilities. POIs and/or CSIs (if applicable) should ensure that their assigned air carrier’s training department reviews the accident scenario of UAL Flight 232. Emphasis should be on time management and crew coordination and/or communication in emergency cabin preparation. The lessons learned in this accident may be very useful for developing air carrier training curriculums. In any case, each emergency training program should provide F/As, who may be required to act in rapidly changing emergency conditions, with knowledge of the air carrier’s policies and procedures. Crew Resource Management (CRM) training, with practice and feedback sessions, is recommended for building communication, situational awareness (SA), problem-solving, and stress management skills.

3-3565  F/A RESTRAINT DURING A CRASH AND EMERGENCY EVACUATION 2nd CHOICE EXIT DETERMINATION.

A. Background. On February 1, 1991, a B-737-300 collided with a Fairchild Metroliner while the B-737 was landing. The Metroliner was positioned on the same runway awaiting clearance for takeoff. As a result of the collision, both airplanes were destroyed. All 10 passengers and 2 crewmembers aboard the Metroliner, and 20 passengers and 2 crewmembers aboard the B-737 were killed.

B. NTSB Recommendations A-91-117 and A-91-118. The NTSB investigation resulted in recommendations to the FAA. They included recommendation A-91-117: Direct the emergency evacuation subcommittee of the Aviation Rulemaking Advisory Committee to examine flight attendant emergency procedures regarding the “2nd choice” exit assignments to ensure that such assignments provide for use of the nearest appropriate exit point. They also included recommendation A-91-118: Issue an Air Carrier Operations Bulletin directing principal operations inspectors to emphasize that during a crash sequence flight attendants must remain properly restrained and seated in their crew seats until the airplane has come to a complete stop.
C. NTSB-Recommended POI and/or CSI Responsibilities. The NTSB believes that POIs and/or CSIs (as applicable) should ensure that air carriers emphasize the following:

1) During F/A training, the air carriers that have a 2nd choice exit assignment for F/As (e.g., overwing Type III exits) should emphasize the need to evaluate personal risk in a decision to use a closer escape path rather than using the assigned 2nd choice exit. For example, another door or any opening in the fuselage may be more acceptable and more appropriate.

2) During a crash sequence, F/As must remain properly restrained and seated in their crew seats until the airplane has come to a complete stop.

D. F/A Manual and Training Program Procedures. Procedures in F/A manuals and training programs that provide for 2nd choice exit assignments for aircraft emergency evacuation should be reviewed. This review should ensure that such assignments also provide for the use of the nearest available exit or fuselage opening when appropriate.

E. Crewmember Determination of Aircraft’s Complete Stop. Air carrier training programs often emphasize the need for rapid evacuation following takeoff and landing accidents. On the other hand, it is often difficult for F/As involved in such accidents to determine when an aircraft comes to a complete stop. This lack of a combination of cues (motion, deceleration, etc.) can result in F/As releasing their seat belts prematurely. If the aircraft experiences a sudden deceleration while a crewmember is unsecured, the result may be incapacitation to that crewmember and an increase of passenger evacuation time. Therefore, crewmember training should emphasize the importance of crewmembers remaining seated and properly restrained until the aircraft comes to a complete stop. It should also identify techniques to aid crewmembers in making that determination.

F. F/A Evacuation Scenario Training. During training in a crash scenario, air carriers should emphasize the following to their F/As:

- The need for them to evaluate personal risk in a decision to use a 2nd choice exit, and
- The need for them to remain seated and properly secured until the aircraft comes to a complete stop.

3-3566 ACCIDENT NOTIFICATION AND MANIFEST ACCOUNTING PROCEDURES.

A. Background. On September 20, 1989, a B-737-400 was an “extra section” passenger flight to replace the regularly scheduled (but cancelled) flight from New York City’s LaGuardia Airport. As the first officer began the takeoff on runway 31, he felt the airplane drift left. The captain also noticed the left drift and used the nosewheel tiller to help steer. As the takeoff run progressed, the aircrew heard a “bang” and a continual rumbling noise. The captain then took over and rejected the takeoff, but did not stop the airplane before running off the end of the runway into Bowery Bay. The accident occurred in darkness. Both pilots and the four cabin crewmembers had minor injuries. Two of the 57 passengers were killed and 15 had minor or serious injuries.
B. **NTSB Recommendation A-90-105.** The NTSB investigation resulted in recommendations to the FAA. They included recommendation A-90-105: Require airlines to provide airport crash/fire rescue personnel accurate and timely numbers of all persons aboard an accident/incident aircraft, and to provide assistance in determining the disposition of persons who have been recovered from the scene of an accident.

C. **NTSB-Recommended Air Carrier Responsibilities.** The problems associated with the recovery efforts involving an air carrier accident, in which a night takeoff was aborted and the airplane ended up running off the end of the runway and into a body of water, were compounded because rescue personnel did not know exactly how many persons were onboard the airplane. This situation was detrimental to the rescue effort because it created an uncertainty as to how many persons the rescuers had to account for during the rescue operation. The NTSB recommended that the FAA require air carriers to:

- Provide airport rescue personnel accurate and timely numbers of all persons aboard an aircraft involved in an accident or incident, and
- Assist in determining the whereabouts of persons who have been recovered from the scene of an accident.

D. **Providing Information About Number of Persons on Aircraft.** The FAA agrees with the NTSB that air carriers should be able to provide accurate and timely information to an appropriate and/or Government authority with respect to the total number of persons on an aircraft and that air carriers should assist the appropriate authorities in determining the whereabouts of persons who have been recovered from the scene of an accident. The sum of the persons onboard an aircraft includes:

- Crewmembers,
- Revenue passengers,
- Non-revenue passengers,
- Lap-held children, and
- Persons occupying cabin or flight deck jump seats.

E. **Load Manifest Requirements.** Part 121 requires that all air carriers prepare a load manifest that includes, at the time of takeoff, the names of passengers (unless the passenger names are maintained by some other means). Part 135 requires, for multiengine aircraft, a load manifest that includes, at the time of takeoff, the number of passengers. On December 30, 1988, the FAA issued Action Notice 8430.29, the primary purpose of which was to provide guidance concerning a recent legal interpretation of part 121 regarding the manifest accounting for all non-crewmembers and the recording of passenger names.

1) Part 121 requires that air carriers include as part of the load manifest, the names of passengers, unless such information is maintained by other means by the air carrier. Other means could be ticket stubs or a computer source. The principal reason for this regulation is to facilitate the rapid and accurate determination of how many passengers are onboard an aircraft and who they are in the event of an emergency situation, such as an accident or hijacking. Not having an accurate record of all passengers could, for example, hamper the efforts of rescue workers during a post-accident rescue operation.
2) The word “passenger,” as used throughout the regulations, means any passenger regardless of age. That interpretation also states that the word passenger, as used in part 121, is not qualified and means “any passenger.” A crewmember, as defined in 14 CFR part 1, § 1.1, means “a person assigned to perform duty in an aircraft during flight time.”

3) Any person provided transportation on an air carrier aircraft, who is not a crewmember assigned by the air carrier to perform duties during flight time, must be recorded as a passenger and listed.

a) Crewmembers include:
   - The PIC;
   - The second in command (SIC);
   - Other required flightcrew members, such as Flight Engineers (F/E), navigators, relief pilots, required and non-required F/As (who are assigned duties by the air carrier); and
   - Any other persons (pursers, customer service agents, etc.) assigned duties during flight time.

b) All other persons are passengers. The following are examples:
   - Non-revenue passengers;
   - Children (regardless of their age and whether they occupy a seat);
   - Deadheading crewmembers or other company employees not assigned duties during flight time;
   - FAA or NTSB safety inspectors; and
   - Law enforcement officials.

F. Ensuring Total Number of Persons Onboard is Available Upon Takeoff. In addition to the load manifest required by these regulations, the air carrier should also have a procedure that ensures that the total number of persons onboard any aircraft, including the total number of crewmembers, is available at the time of takeoff. The procedures should, as a part of the manual requirements of parts 121 and 135 (accident notification procedures) contain guidance, instructions, and procedures regarding the local authorities (e.g., airport police, management, and/or fire department) who the air carrier’s personnel should contact in the event of an accident or incident. The procedures should also include what information to give in the notification, including the total number of persons onboard the aircraft. The air carrier should also have a procedure that provides assistance to those authorities in determining the whereabouts of persons that the air carrier knows have been recovered from the scene of an accident.

G. Airport Emergency Plans. If an airport is certificated in accordance with 14 CFR part 139, it must have an airport emergency plan. Air carriers and commercial air carriers should review the plans of those certificate airports to which they operate to ensure that the procedures they develop, in accordance with the regulations, are consistent with the airport emergency plan that the airport air carriers developed. FAA ACs in the 150 series (e.g., AC 150/5200-31, Airport Emergency Plan) contain additional information concerning airport emergency plans.
POLICY FOR PASSENGER AND F/A USE OF SEAT BELTS DURING TURBULENCE. This paragraph provides guidance about passenger and crewmember use of seat belts during turbulence. Additionally, air carriers should include procedures regarding communication and coordination in all crewmember manuals and training programs.

A. Regulations for Air Carriers. Regulations require the air carrier to ensure the following:

- Each passenger has an approved safety belt properly fastened around him or her during movement on the surface, takeoff, and landing;
- Passengers have their seat belt fastened any time the seat belt sign is illuminated; and
- Signs are installed so they are visible (usually on the back of passenger seats), advising each passenger to keep their seat belts fastened when seated.

B. Background. In 1993, the FAA issued an air carrier operations bulletin emphasizing the importance of passenger seat belt discipline and asking air carriers to establish special emphasis programs to highlight the importance of this issue. Many airlines cooperated by making innovative changes to announcements and placing articles in publications informing passengers of the dangers associated with sitting in a seat without their seat belts fastened. In spite of all these efforts, passengers and F/As continue to sustain injuries in flight during turbulence, evasive maneuvers, or other in-flight disturbances. Many of these injuries are serious and result in broken bones (especially ankle bones) and head injuries.

C. Required Announcement for Keeping Seat Belts Fastened While Seated. Part 121 requires that a crewmember give an announcement after each takeoff (immediately before or immediately after turning the seat belt sign off) that passengers should keep their seat belts fastened while seated, even when the seat belt sign is off. POIs and/or CSIs (as applicable) should emphasize the requirement for this announcement. POIs and/or CSIs (as applicable) should also remind air carriers that making a PA announcement to remind passengers that Federal regulations require them to fasten their seat belts when the seat belt sign is turned on is advisable. POIs and/or CSIs (as applicable) should encourage their assigned air carriers to establish additional procedures to emphasize the importance of passengers wearing their seat belts at all times while seated. These procedures could include additional announcements, video presentations, and articles in air carrier publications or pamphlets in seat pockets.

D. Procedures for Coordination and Communication Between Flightcrew Members. Coordination and communication between the flightcrew members and the F/As during all phases of flight concerns the FAA. POIs should ensure that their assigned air carrier’s training programs and operational manuals contain the safe and effective procedures for coordination and communication between all crewmembers. These procedures should address:

1) Guidance to flightcrew members on the importance of a predeparture briefing of the F/As, which includes:

- Forecast turbulence-related weather conditions;
- Securing the galley and cabin;
• Carry-on baggage;
• Passengers; and
• Scheduling of cabin service and pickup.

2) Use of the PA system or other signals to alert F/As and passengers of anticipated in-flight turbulence.

3) Guidance and specific signals to notify F/As when they are to cease in-flight services, secure galley, sit with their restraints fastened, and/or resume duties.

4) Guidance for F/As regarding F/A determination that turbulence is too severe for the continuation of service and that they are to take their seats, fasten their restraints, and notify the flightcrew members regarding this action.

5) Standardized notification to the flightcrew from the F/As when they complete all pretakeoff or prelanding duties and have secured the cabin.

6) Standardized signals from the flight deck crew before takeoff and before landing, which they use to allow sufficient time for the F/As to be seated.

3-3568 GALLEY SECURITY. Reported incidents of galley carts not properly secured or galley service items not properly managed have caused concern that there is a need to have additional guidance regarding galley carts and galley supplies. Notwithstanding the FAA Miscellaneous Operational Amendments final rule (57 Federal Register (FR) 42666), effective on October 15, 1992, the compliance schedule for enforcing § 121.577, regarding the pickup of paper cups and plastic glasses prior to movement of the aircraft, has not been established at this time. Inspectors have reported finding that proper restraints were no longer available for galley equipment and that galley components could not be restrained by the existing latches. Inspectors have also reported finding latching devices that did not work properly for stowage compartments or drawers. The only latches available or the latches that were identified as the primary latches were not long enough to keep the doors properly closed. Certificated air carriers should have procedures to address the following areas:

A. Responsibility for Galley Restraint. A specified crewmember should be responsible for each galley. However, all crewmembers are responsible for ensuring galley security. Crewmembers have been known to enter a secured galley and open a compartment and inadvertently forget to resecure the galley. Therefore, crewmembers should:

1) Ensure that the galley and restraints are available and function properly.

2) Report malfunctioning galley equipment and restraints by following the specific procedures.

3) Check the proper stowage of items of mass, as referenced in § 121.576.

4) Check the proper stowage of equipment in the galley.

B. Availability of Proper Restraint.
1) The primary restraint should be identified.

2) The primary restraint should be in good working order and available for use during each takeoff and landing.

3) Air carriers should have procedures to ensure that the primary restraint performs the function for which it was intended.

NOTE: Not all latches required to be in the locked position provide the primary restraint.

C. Malfunctions in Galley Equipment. The air carrier should have specific procedures for reporting galley equipment and restraints that have malfunctions. These procedures should include a method identifying the person (or position) who will receive the report. The procedures should be a part of the required F/A manual.

D. Checking Galley Restraints. The responsible F/A should check the galley and galley components to ensure proper restraints, including:

- Actions such as pulling vigorously on carts, oven doors, drawers, and other components. This is a good method of ensuring that they are secured;
- Ensuring the safe and correct parking of carts on mushrooms;
- Ensuring that brakes are operational on carts that use brakes;
- If keys are applicable to the container, then ensuring that the key is in the locked position should be part of the actual checking procedures;
- Ensuring that galley curtains are secured open for takeoff and landing; and
- Visual checking of galley, galley components, and galley cart security when possible.

E. Phases of Flight. The procedures should include, at least, the following information for each phase of flight:

1) Prior to Movement on the Surface. Prior to movement on the surface, the responsible F/A should ensure that all primary galley restraints are available and are in working order.

2) Movement on the Surface.

   a) All galley items, with the exception of paper cups and plastic glasses, should be picked up and properly stowed prior to movement on the surface. Extension of the compliance schedule for the pickup of paper cups and plastic glasses should not result in the safety problem of having galley components unrestrained. When an air carrier wishes to serve food or beverages while the airplane is stationary, the air carrier should ensure that this service will not affect galley security.

   b) The air carrier should either serve beverages in containers that can be thrown in a garbage receptacle or ensure that all items which are not disposable are picked up prior to movement on the surface. Pickup of service items is considered safety-related and therefore all
F/As assigned duties on that flight may pick up galley service items during movement on the surface.

3) **Prior to Takeoff.** F/As should ensure that the galley and galley components are properly stowed and restrained.

4) **Procedures for Galley Security In-Flight.** Procedures for galley security in flight include the following:

   a) Carts are not to be left unattended.

   b) Air carriers should have procedures which ensure that F/As are no more than 10 feet away (approximately three rows) from carts left in the aisles.

   c) F/As should not park carts out of their normal galley takeoff/landing positions unless they can be properly restrained. Some aircraft are equipped with restraint devices such as mushrooms, which will properly hold carts in other areas. When this is the case, they may be left unattended; however, most items should be cleared from the top of the carts. If left unrestrained, items on the top of the carts can become dislodged and cause injuries should there be a sudden directional change of the aircraft. It is recommended that all cart restocking be done in the galley as this is a good safety practice.

   d) During service, other than when a cart is being moved, the brake (if applicable) must be engaged. If a cart is parked out of the galley during the flight, then it should be on the mushroom.

   e) Galley carts and the galley itself should be maintained in an orderly fashion because of the possibility of turbulence or evasive actions. This means that as many supplies as possible should be stowed or left in their containers. It is recommended that the top of the carts be kept as clear as possible. During light turbulence, when service can continue, it is still advisable to discontinue the service of hot liquids and these liquids should be removed from the top of the cart.

5) **Prelanding.** F/As should ensure that all galleys are properly restrained and that galley components are properly stowed and secured.

6) **Postlanding.** F/As should ensure that all reports of malfunctioning galley restraints, galley components, and galley carts are properly recorded and/or reported.

**3-3569 ENSURING THAT CHILDREN WHO HAVE REACHED THEIR SECOND BIRTHDAY ARE PROPERLY RESTRAINED.**

**A. Background.** On June 8, 1995, a DC-9-32 was operated as a scheduled, domestic passenger flight under the provisions of part 121. The flight was cleared for takeoff on runway 27R. Five crewmembers and 57 passengers were onboard. As the airplane began its takeoff roll, the airplane occupants and air traffic control (ATC) heard a “loud bang.” The right engine fire warning light illuminated, the flightcrew of the following airplane reported to the crew that the right engine was on fire, and the takeoff was rejected. Shrapnel from the right
engine penetrated the fuselage and the right engine main fuel line, and a cabin fire erupted. The airplane was stopped on the runway, and the captain ordered the evacuation of the airplane. The F/A seated in the aft F/A jump seat received puncture wounds from shrapnel and thermal injuries. Another F/A and five passengers received minor injuries. The pilots, the third F/A, and 52 passengers were not injured. The airplane’s fuselage was destroyed.

B. NTSB Recommendation A-96-84. The NTSB investigation of this accident resulted in recommendations to the FAA. These recommendations included A-96-84: Provide guidance on how to implement the requirement that occupants who are more than 24 months old are restrained during takeoffs, landings, and during turbulence.

C. Violations of Restraint Regulations for Lap-Held Children. During this NTSB investigation, it was determined that one child who had reached his or her second birthday was listed as a lap-held child, despite regulations that require all passengers who have reached their second birthday to be restrained during takeoffs and landings. The NTSB has long been concerned about the inadequacy and enforcement of this regulation, it has identified at least six accidents and one enforcement action in which children who had reached their second birthday were unrestrained because they were held in someone’s lap. The ages of these children ranged from 26 months to 5 years.

D. Present Regulations for Lap-Held Children. Present regulations allow parents/guardians of children who have not reached their second birthday the option of holding these children in their laps. Children who have reached their second birthday must be restrained in an approved restraint system. As pointed out in the background to the NTSB recommendation, the problem appears to be that some parents/guardians want to hold children who have reached their second birthday. This is not an acceptable procedure.

E. Recommendation for Air Carriers to Ask the Ages of Lap-Held Children. In order to preclude this occurrence, many air carriers ask the age of the lap-held child when the child is presented to be placed on the load manifest. In addition, many air carriers instruct crewmembers to ask parents the age of lap-held children. These procedures complement each other and are recommended.

3-3570 F/A APPAREL WHILE PERFORMING DUTIES ASSOCIATED WITH FLIGHT.

A. Background. On June 8, 1995, a DC-9-32 was operated as a scheduled, domestic passenger flight under the provisions of part 121. The flight was cleared for takeoff on runway 27R. Five crewmembers and 57 passengers were onboard. As the airplane began its takeoff roll, the airplane occupants and ATC heard a “loud bang.” The right engine fire warning light illuminated, the flightcrew of the following airplane reported to the crew that the right engine was on fire, and the takeoff was rejected. Shrapnel from the right engine penetrated the fuselage and the right engine main fuel line, and a cabin fire erupted. The airplane was stopped on the runway, and the captain ordered the evacuation of the airplane. The F/A seated in the aft F/A jump seat received puncture wounds from shrapnel and thermal injuries. Another F/A and five passengers received minor injuries. The pilots, the third F/A, and 52 passengers were not injured. The airplane’s fuselage was destroyed.
B. NTSB Recommendation A-96-88. The NTSB investigation of this accident resulted in recommendations to the FAA. These recommendations included A-96-88: Issue an operations bulletin recommending that principal operations inspectors advise their air carriers to disseminate FAA safety guidance on airline passenger attire to their flight attendants.

C. Safety Considerations for Apparel to Decrease the Chance of Burns. The NTSB investigation of this accident disclosed that the F/A who received the most serious injuries was wearing shorts and a short-sleeved shirt. Safety experts agree that in order to decrease the chance of sustaining burns, it is better to wear long sleeves and pants than it is to wear short sleeves and short pants. In addition, fabrics such as wool and cotton are better than synthetic fabrics. Also, it is better to have low-heeled shoes which are enclosed. Straps or laces are encouraged, while sandals are discouraged.

1) Air carriers should ensure that those charged with developing the criteria for the attire crewmembers wear while performing duties associated with flight are aware of these safety considerations.

2) Air carriers should ensure that crewmembers are aware of the information regarding the safety considerations for the apparel they wear during flight.

3-3571 ADOPTION OF FLIGHTCREW MEMBER FLIGHT TIME LIMITATION RULES TO ESTABLISH F/A DUTY, FLIGHT TIME LIMITATIONS, AND REST RESTRICTIONS.

A. F/A Duty Period Limitations and Rest Requirements Final Rule. The F/A duty period limitations and rest requirements final rule allows air carriers to adopt the flightcrew member rules for their F/As. This rule provides additional scheduling flexibility and eliminates the need for an air carrier to have two sets of scheduling requirements for its flightcrew members and F/As. This provision will also permit F/As on such operations to be scheduled with the same limitations as the flightcrew members. This option appears in § 121.467(c) and part 135, § 135.273(c) of the final rule.

B. Administrator-Approved Written Procedures. In order to adopt its flightcrew member flight, duty, and rest requirements for its F/As, the air carrier must establish written procedures that are approved by the Administrator and referenced in the air carrier’s operations specifications (OpSpecs). The procedure as written must comply with the following guidelines and contain at least the following information:

1) Air carriers wishing to apply flightcrew member flight, duty, and rest requirements to F/As may obtain approval by submitting their procedures for preliminary review and approval to the POIs assigned to them at the FAA Flight Standards District Office (FSDO) that is charged with the overall inspection of their operations. The approval process is similar to those used for exit seating and passenger carry-on baggage and is required to ensure that flightcrew member rules are adequately applied to F/As.

2) The written procedures must apply to all F/As used in the air carrier’s operation.

3) The written procedures must be applied to the air carrier’s entire operation.
4) The written procedures must show that the flightcrew member rules are adequately applied to the F/As. They must clearly show that when the flightcrew members are following the rules for an operation, for example, domestic, the F/As will also be following those rules. Another example would be if the flightcrew members are using the flag rules, then the F/As must also be following the flag rules, and the written procedures would clearly show this is the case.

5) The written procedures for establishing duty period limitations and rest requirements for air carriers certificated under part 135 must include the limitations contained in part 135 subpart F, except for provisions for onboard rest facilities, as appropriate to the operation being conducted.

6) The written procedures must provide information about augmenting the F/A crew complement. Parts 121 and 135 air carriers are required to provide F/As on aircraft with certain passenger seating configurations in accordance with §121.391, §135.107, or the air carrier’s OpSpecs, as appropriate. The number of F/As required on an aircraft to meet the provisions of §121.391, §135.107, or the air carrier’s OpSpecs, whichever is greater, is referred to as the “minimum F/A crew complement.”

NOTE: Any air carrier that elects the options to apply flightcrew member flight, duty, and rest requirements to F/As and has established written procedures for augmenting the minimum flightcrew member complement, must establish procedures for augmenting the minimum F/A complement. The augmenting procedures must be based on the number of flightcrew members assigned to the flight that is in addition to the minimum flightcrew member complement as specified in the aircraft Type Certificate Data Sheet (TCDS). The following are examples:

- If the minimum flightcrew member complement on a Boeing 747-200 is three, as specified in the aircraft TCDS, an air carrier that schedules four flightcrew members for an extended, long-range flight will be required to schedule one F/A in addition to the minimum F/A crew complement that is required by §121.391, §135.107, or the air carrier’s OpSpecs.
- If the OpSpecs for a certain airplane require eight F/As, and if the air carrier adds one flightcrew member, that air carrier would be required to add one additional F/A, for a total of nine F/As.

7) In addition, in the written procedures, each air carrier must show how they will ensure that the definition of “rest period” in the final rule is applied to F/As. (Refer to the detailed discussion on “Rest Period Requirements” and “Reserve Status, Stand-by Status, or Similar Assignments” in the final rule.)

8) Under the provisions for applying flightcrew member flight, duty, and rest requirements to F/As, if the Administrator finds that revisions to the written procedures are necessary for the continued adequacy of the procedures for applying flightcrew member flight, duty, and rest requirements to F/As, the Administrator will require the air carrier to make
necessary changes within 30 days after being notified by the Administrator. In addition, an air carrier may petition the Administrator to reconsider the notice to change the procedures.

NOTE: This procedure for requiring changes is consistent with the current regulatory language for a number of air carrier programs.

9) Any air carrier that establishes written procedures to apply the flightcrew member flight, duty, and rest requirements to F/As and that subsequently wishes to revise this practice and schedule F/As according to the duty period limitations and rest requirements in § 121.467 or § 135.273, must amend their OpSpecs in accordance with § 119.51. These sections require an air carrier to file an application for an amendment of OpSpecs at least 15 days before the effective date proposed by the applicant for the amendment, unless a shorter filing period is approved by the FSDO charged with the overall inspection of the air carrier. See Volume 3, Chapter 18, Section 3 for information regarding the issuance of OpSpec A032.

3-3572 EXIT SEATING PROGRAM. The applicable air carriers must comply with the appropriate parts of 14 CFR pertaining to exit seating: §§ 121.585 and/or 135.129. The following information provides guidance and clarification on the development of the exit seating program and defines the applicability.

A. Applicability.

1) Exit row regulations apply to the following air carriers:

   a) Part 121 certificated air carriers. This includes air carriers who carry passengers pursuant to § 121.583, because § 121.585 is not on the list of part 121 regulations from which those air carriers are exempt.

   b) Part 135 on-demand air carriers with aircraft having more than 19 passenger seats.

2) The exclusion of part 135 on-demand aircraft having 19 or fewer passenger seats and part 135 commuter aircraft having 9 or fewer seats was based on typical passenger seating configurations and exit availability of these aircraft.

B. Exit Seat. An exit seat is defined as each seat in a row of seats through which passengers would have to pass to gain access to an exit from the first seat inboard of the exit to the first aisle inboard of the exit. A passenger seat having direct access means a seat from which a passenger can proceed directly to the exit without having to enter an aisle or pass around an obstruction (such as a bulkhead, lavatory, closet, galley, etc.).

1) The air carrier’s manual procedures must contain a listing of designated exit seats for each type of passenger seating configuration in its fleet.

2) “Exit seat” is a more accurate term than “exit row.” In some configurations involving a row of two seats at an exit, only one seat is behind a partition. For example, the forward most row on the left side of the Dash-8:
a) The window seat, obstructed by the partition, is not considered an exit seat because the passenger does not have direct access to the forward left exit.

b) However, the passenger seated next to that seat on the aisle has direct access because that passenger does not have to pass around the bulkhead to reach the exit.

NOTE: This is one of the rare exceptions whereby the entire row is not an exit row.

C. Selection Criteria.

1) As applicable to the exit seating rule, the required selection criteria for an occupant of an exit seat are listed in §§ 121.585(b) and 135.129(b). The selection criteria are a listing of capabilities and conditions to be applied to determine the suitability of persons to occupy an exit seat.

2) The selection criteria should be contained in its entirety in the air carrier’s manuals, including the F/A manual, and the exit seating passenger information card. The selection criteria must also be available for inspection by the public at all passenger ticket counters and loading gates. Air carriers should avoid paraphrasing the selection criteria, as it may change the meaning of the neutral selection criteria and result in unwarranted discrimination. An example of such paraphrasing whereby the meaning of the criteria is changed would be if an air carrier misrepresented § 121.585(b)(4) as follows:

a) “The person lacks sufficient visual capacity to perform one or more of the applicable functions.”

b) The omission of “without the assistance of visual aids beyond contact lenses or eyeglasses” (as stated in the regulation) significantly changes the meaning of the criteria and could result in unwarranted removal of passengers with eyeglasses seated at exit seats. However, in some instances the regulatory language could be changed for simplification purposes without changing the meaning of the criteria. For example, “to exit expeditiously” could be restated as “to exit quickly.”

3) The airline employee designated to determine who may be assigned to an exit seat must make this assessment in a nondiscriminatory manner by consistent application of the neutral criteria.

a) For example, if a passenger is being evaluated for assignment to an exit seat, age (with the exception of those younger than 15 years of age) or the size of a person alone should not be the determining factors. The airline employee must evaluate the individual’s physical and mental capabilities and other conditions, as clearly outlined in the selection criteria. If that individual meets all the selection criteria, then age or size alone should not be a disqualifying factor.

b) However, if that individual has difficulty walking and lifting his or her own carry-on luggage, then the application of the neutral criteria would exclude this individual from
being assigned an exit seat because it would appear by observation that the individual would not be able to move expeditiously and perform the tasks involved in the emergency evacuation.

c) For example, if a passenger with a prosthesis is being evaluated for assignment to an exit seat, the presence of the prosthesis would not be the determinant for being able to meet the criteria but rather the physical ability to perform the exit seat duties.

d) During the screening, if the CH determines that a passenger may not have full functionality of the prosthetic limb (e.g., the passenger has removed the prosthesis for comfort or their prosthesis is in a sling or arm-brace), then they may not meet the “mobility” exit row criteria.

D. Functions. As applicable to the exit seating rule, §§ 121.585(d) and 135.129(d) list the functions that a passenger seated at an exit seat must be willing and able to perform in the event of an emergency. The functions must appear on the exit seating passenger information card, but can be in written form or graphically displayed. The functions must also be contained in the written airport information available at the passenger ticket counters and loading gates and in the air carrier’s manual procedures.

E. Seat Selection/Assessment/Verification Process. Each air carrier, using the selection criteria, is required to determine the suitability of each person who occupies an exit seat. Regulations require that persons responsible for making this determination be identified in the air carrier’s manual. The air carrier is further responsible for developing procedures concerning this passenger selection process. The procedures should address:

- Who is responsible for making these determinations (prior to boarding and the final verification onboard the aircraft);
- How they will make this determination;
- When the process will be performed;
- Where the process will be performed; and
- Identification of each designated exit seat (for each passenger seating configuration in its fleet).

1) Advanced Seating.

a) To the maximum extent feasible, exit seats should be assigned prior to boarding the aircraft. This would reduce the confusion or requests for reseating and possible delays after the aircraft is boarded. This does not preclude an air carrier from having an open seating policy, advance seat selection, self check-in kiosks, or other types of computer/internet technologies that allow advance seating selection and check-in at airports where passengers may be permitted to select and be assigned an exit seat at check-in without screening by air carrier personnel. However, when these types of check-ins are in place, additional procedures should be developed and implemented for screening, verifying, and reseating passengers onboard the aircraft to ensure compliance with exit seat assignment requirements.

b) For example, menu prompts that appear at the point of exit seat selection could assist in preliminary verification of passenger eligibility. When a passenger has chosen an
exit seat by means of a self-check-in kiosk, the ground agent at the ticket lift point could make
determinations and assessments at the time of the required verification of positive ID to meet
TSA security requirements. In order to safeguard the screening process, other carriers may select
a “see agent” prompt at the point of passenger selection of exit seating via self-check-in. POIs
and/or CSIs (if applicable) should ensure that when air carriers offer these methods of advanced
seat selection, check-in, and open seating, approved exit seating programs provide ample
information detailing the methods of screening and procedural safeguards in place to ensure
compliance with exit seat assignment requirements.

2) Persons Who Will Determine Exit Seat Suitability. The air carrier is
responsible for identifying those persons who will make the determination as to the suitability of
the person assigned to an exit seat. The responsibility can be assigned to a customer service
agent, a crewmember, or other person specified by the air carrier in its company manual
procedures.

3) Passenger Screening. Should air carriers choose to use electronic media that
allows passengers to select exit seats and print out a boarding pass without going through an
employee of the company, they must have procedures in place for screening those passengers.
The individuals and the procedures used to accomplish this should be identified in the
appropriate air carrier manuals.

4) Passenger Assessment Process for Exit Seating. While the regulation
specifically defines the criteria for persons occupying an exit seat, the method by which the
airline employee assesses the person assigned to an exit seat should be defined by the air carrier
in its company manual. This process generally requires a physical observation of the person and
should require additional processes, such as conversation with the person, to determine if he or
she meets the selection criteria (the person has the ability to hear, understand, and
impert information, and is not distracted by other responsibilities such as caring for small
children or other traveling companions, etc.).

5) Verification of Exit Seat Occupants Before Taxi/Pushback.
Sections 121.585(g) and 135.129(g) state that the air carrier may not taxi or pushback unless at
least one required crewmember has verified that no exit seat is occupied by a person that the
crewmember determines is likely to be unable to perform the emergency functions. The required
crewmember and the method used to make this determination must be specified in the company
manual.

F. Individual Exit Seat Briefings.

1) The NTSB examined 46 passenger aircraft evacuations that occurred between
September 1997 and June 1999. The NTSB Safety Study 00/01, Emergency Evacuation of
Commercial Airplanes, resulted in recommendations to the FAA. They include recommendation
A-00-77: Require air carriers to provide all passengers seated in exit rows in which a qualified
crewmember is not seated a preflight personal briefing on what to do in the event the exit may be
needed. To read the entire report, go to https://app.ntsb.gov/doclib/safetystudies/SS0001.pdf.
2) During the study, the NTSB examined passenger performance in exit rows for the six cases for which the Board received information on the overwing exit operation. In several evacuations, the passengers had trouble using the exits correctly and the NTSB determined that one reason for these difficulties was passenger inattention to the safety materials provided. The NTSB found that in one case, exit seats were occupied by two passengers older than age 70, one of whom was unable to open the exit. In addition, three passengers seated in exit rows did not speak the language in which briefings and oral commands were given by the crew.

   a) Of the six study cases, several of the air carriers had procedures in place to individually brief passengers on exit row tasks. Passengers who received an individual briefing were more likely to read the safety card than those who did not receive an individual briefing.

   b) The NTSB found that 44.5 percent of the passengers who were individually briefed reported examining their safety cards and 16 percent of the passengers who did not receive an individual briefing reported examining their safety cards.

   c) In addition, those who received individual briefings performed better during actual evacuations and were better prepared to operate the overwing exits.

3) Many air carriers have procedures that designate certain crewmembers to conduct additional structured personal conversations or briefings, beyond the oral briefing required by §§ 121.585(h) and (i) and 135.129(h) and (i), to ensure that the passengers in exit seats can hear, understand, and speak the language of the air carrier. (However, fluency in the language of the air carrier is not required as long as the exit seat passengers can understand crew instructions, commands, and the graphic illustrations related to exit seat functions, and are able to adequately impart information related to emergency functions.)

4) Individual briefings that are given to passengers who occupy exit seats have a positive effect on the outcome of an aircraft evacuation. Individual briefings also assist F/As in assessing the suitability of passengers who occupy those seats. An individual briefing reminds passengers of their exit seat responsibilities, gives them the encouragement to review their safety information card and also gives passengers the opportunity to ask the F/A any questions they may have about exit operation or procedures. This briefing also presents an opportunity for the F/A to assess the passengers’ ability to understand oral crew commands.

5) POIs and/or CSIs (if applicable) should strongly encourage their assigned air carriers to consider the safety benefits that are accomplished by individual exit seat briefings and to include such briefings in their predeparture procedures. In the absence of procedures that require individual briefings, POIs and/or CSIs (if applicable) should ensure that each air carrier has a method in place to ensure compliance with § 121.585(g), which requires verification by a required crewmember that the passengers can perform all required functions, including the ability to follow oral directions.

G. Assessment/Verification Prior to Landing. Air carriers should also have procedures in place to ensure that exit seats are not occupied by persons who do not meet the exit seat criteria. Crewmembers should continue to monitor exit seat occupancy during flight in the course of their normal duties to ensure that persons who do not meet the criteria do not move into exit
seats. In addition, crewmembers should recheck the exit seats before landing to make certain that passengers who met the criteria and occupied exit seats prior to takeoff still meet the exit seat criteria for landing. (Some situations that can cause passengers who met the criteria before takeoff to not meet the criteria for landing are intoxication during flight, panic attacks, and passenger illness or injury.)

**H. Exit Seating Passenger Information Card.** Sections 121.585(d) and 135.129(d) provide the requirement for the contents of the exit seating passenger information card. This exit seating passenger information card may be in addition to the standard passenger information card, which is required by §§ 121.571(b) and 135.117(e), or it can be incorporated into the standard passenger information card. The exit seating passenger information card is required to be located at each designated exit seat. The exit seating passenger information card is to be presented in the primary language in which briefings and oral commands are given by the crew. It must contain the following information:

1) The selection criteria, as found in §§ 121.585(b) and 135.129(b).
   a) The selection criteria are mobility, strength, and dexterity standards that do not specify where exits should be deposited. Exits should be deposited in accordance with the airplane manufacturer’s instructions.
   b) Air carriers must depict on their passenger information card the actual weight of the exit so that each potential exit seat passenger can make an assessment as to whether or not they meet the selection criteria. Therefore, air carriers must include the selection criteria on their passenger information card.

2) The emergency function, as found in §§ 121.585(d) and 135.129(d).
   a) The functions must be listed (as in the rule) and/or graphically displayed on the passenger information card. Either or both methods are acceptable.
   b) If a function cannot be graphically depicted on the card (such as “Follow oral directions and hand signals given by a crewmember”), then it should be written on the exit seating information card.

3) The following contents found in §§ 121.585(e) and 135.129(e).
   a) A request that passengers identify themselves for reseating if they cannot meet the selection criteria; have indiscernible conditions that will prevent them from performing the applicable functions listed on the card; may suffer bodily harm as a result of performing one or more of the functions; or do not wish to perform the functions.
   b) A request that passengers identify themselves to allow reseating if they lack the ability to read, speak, or understand the specified language in which crew commands will be given in an emergency. (This request is to be written in each language used by the air carrier for the passenger information card. If the card, for example, contains some safety instructions in several languages, then this request should be in each of those languages.)
I. **Oral Briefing.** Sections 121.585(h) and (i) and 135.129(h) and (i) provide the specific requirements for the oral briefing. The content of the required oral briefing must be part of the air carrier’s manual procedures.

1) As per the rule, the oral briefing shall:

   a) Reference the exit seating passenger information card, along with the criteria and the functions. (The required oral briefing only requires a reference, not a reading of the contents of the criteria and functions.)

   b) Have a statement that requests the passenger to identify himself or herself for reseating if he or she:

      - Cannot meet the selection criteria;
      - Has an indiscernible condition that will prevent him or her from performing the applicable (emergency) functions;
      - May suffer bodily harm as the result of performing one or more of the functions; or
      - Does not wish to perform the functions.

2) This briefing should be conducted after all the passengers have boarded. If the required briefing is conducted several minutes before the entry door is closed and then several late passengers board after the briefing is completed, the briefing should be repeated in case one or more of the late passengers occupies an exit seat.

3) It is beneficial when the air carrier incorporates the exit seat locations for that aircraft configuration into the required oral briefing, so the passengers seated at the exit seats clearly understand that the briefing requirements are directed toward them. Some air carriers further identify exit seat locations to passengers and crew with placards in the cabin, or with an indication on the passenger boarding pass.

J. **Reseating/Full Booking.**

1) Sections 121.585(k) and 135.129(k) require that in the event that a passenger assigned to an exit seat would be unable to perform the evacuation functions, or requests a non-exit seat, the air carrier shall expeditiously relocate the passenger to a non-exit seat. The air carrier’s manual procedures should clearly outline how the reseating would be accomplished.

   NOTE: The air carrier, by regulation, shall not require the passenger to disclose his or her reason for needing reseating.

2) Sections 121.585(l) and 135.129(l) require that in the event a passenger assigned to an exit seat wishes to be relocated to a non-exit seat and all of the non-exit seats are booked full, the air carrier must move a passenger who is willing and able to assume the evacuation functions from a non-exit seat to the exit seat. The air carrier’s manual procedures should clearly outline how the reseating with a full load would be accomplished.
NOTE: If a passenger is assigned to an exit seat but later has second thoughts about being seated at an exit seat, the passenger should be relocated prior to pushback. However, if taxiing has begun or takeoff is already underway, the rule does not require that the passenger be moved. This would create dangers as great as or greater than allowing the person to remain in place until the aircraft is airborne. The cabin crew has been alerted to the location of a potential problem in the event of an evacuation and can wait until airborne when it would be safe to relocate the passenger. This is not an excuse for a crewmember to be complacent in performing the required verification.

K. Denial of Transportation.

1) Sections 121.585(m) and 135.129(m) state that an air carrier may deny transportation to any passenger under this section only because:

- The passenger refused to comply with instructions given by a crewmember or other authorized employee of the air carrier concerning the implementation of the approved exit seating procedures; or
- The only seat that will physically accommodate the person’s disability is an exit seat.

2) The air carrier’s manual procedures must describe the reasons for denial of transportation. It should also describe how the situation will be handled and who is designated to handle it.

L. Disputes. Sections 121.585(n)(iv) and 135.129(n)(iv) require that the air carrier include procedures that address how to resolve disputes arising from the implementation of this rule, and identify the employee on the airport to whom complaints would be addressed for resolution. This person is commonly referred to as the Complaint Resolution Official (CRO) as described in 14 CFR part 382, § 382.151.

M. Airport Information. Sections 121.585(f) and 135.129(f) require that each air carrier shall make available for inspection by the public at all passenger loading gates and ticket counters at each airport where it conducts business, written procedures established for making determinations in regard to exit seating. The method of presentation of the airport information may vary, such as a flyer, a card, a ticket jacket, a computer printout, a posted sign, etc. The air carrier’s exit seating program should state the method in which this information will be presented to anyone who requests this information. This written airport information should contain the:

- Selection criteria, as found in §§ 121.585(b) and 135.129(b);
- Emergency functions, as found in §§ 121.585(d) and 135.129(d);
- Requests for reseating, as found in §§ 121.585(e) and 135.129(e); and
- Reasons for denial of transportation, as found in §§ 121.585(m) and 135.129(m).

N. Program Content for Submission. The air carrier should submit the following documents to the POI and/or CSI (if applicable):
1) **Manual Excerpts.** Manual excerpts should be submitted from the operations, F/A, and passenger/customer service portions of the air carrier’s manuals, with procedures appropriate for the air carrier’s employees to adequately perform their exit seating duties and responsibilities. The procedures should contain:

- Selection criteria;
- Emergency functions;
- Location of designated exit seats;
- Requirements for exit seating passenger information cards;
- Crewmember verification of appropriate seating in exit seats;
- Passenger oral briefings;
- Seat assignments;
- Requirements for written airport information, reseating, full bookings, assignment of exit seats, denial of transportation, and resolving disputes arising from exit seating; and
- Identification of the air carrier employee at the airport to whom complaints should be addressed for resolution.

2) **Configuration Diagrams.** These should be submitted (for evaluation) and should display each passenger seating configuration in the air carrier’s fleet. The diagram should highlight all exit seats, all passenger exits, and any obstruction, such as bulkheads, lavatories, closets, galleys, etc.

3) **Exit Seating Passenger Information Cards.** Must be submitted for each type, make, model, and series (M/M/S) aircraft. These cards may be submitted in draft form, pending final approval.

4) **Airport Information.** The air carrier should identify the manner in which the written airport information is presented and submit a draft copy pending final approval.

**O. Approval Process.** The intent of the exit seating review and approval process is to ensure consistent application of the regulation, particularly when the rule was new and policy was being developed. (See Figure 3-129, Exit Seating Program Job Aid.) During the original approval process, the exit seating programs were sent for review, first to the POI and then forwarded for a second review by the Exit Seating Coordinator at the Regional Office (RO) who approved the programs on behalf of the Office of the Director (AFS-1). The POI no longer needs to forward exit seating programs to the Exit Seating Coordinator at the RO for approval. The POI is now considered to be the representative of AFS-1 in terms of compliance with §§ 121.585(p) and 135.129(p).

1) Once the air carrier has completed their exit seating program package, a copy of the program should be forwarded in draft format to their POI and/or CSI (if applicable). During the review process, the POI and/or CSI (if applicable) should use this guidance and complete the checklist in Figure 3-129. If the POI and/or CSI (if applicable) is not satisfied with the package, the inspector will return it to the air carrier with an explanation of the changes/additions needed for the program. If the POI and/or CSI (if applicable) finds the program to be complete and satisfactory, the POI will then give the final approval to the air carrier and issue OpSpec A022.
2) Any subsequent revisions to the approved exit seating program, such as a change in procedures, an addition of new aircraft, a change in the passenger seating configurations, a change to the exit seating passenger information card, etc., must be sent to the POI and/or CSI (if applicable). The certificate holding office should maintain a copy of an up-to-date version of their air carrier’s exit seating program.

P. Special Approvals. There may be situations whereby an air carrier may conduct some operations entirely in a foreign country. Such a situation could occur during a wet lease operation. The entire airplane may be full of passengers who all speak one foreign language. The intent of the rule was not to exclude foreign-speaking passengers from the exit seat, provided these passengers understand the commands given by the crewmembers in the event of an emergency, all the information on the approved exit seating passenger information card, and the required oral briefings. This may be accomplished in a number of ways:

- The crewmembers may be bilingual and trained in two languages, one of which is the language of the foreign passengers.
- The briefings may be conducted in two languages, the language of the foreign speaking passengers and the primary language of the air carrier.
- The exit seating passenger information cards should also be in the two languages.

NOTE: An amendment to the existing exit seating program would be needed that details the manner in which the air carrier would address this type of operation.

1) If the situation is such that the operation is conducted domestically and a large group of foreign-speaking passengers board the aircraft speaking one particular foreign language, and board in such numbers that the only seats remaining for them are the exit seats, then the air carrier would need to develop special procedures for FAA review and approval that would address this type of operation in order to comply with the rule.

2) If the air carrier cannot find any passengers who speak the language used by the air carrier in domestic operations, then the air carrier should attempt to find those passengers who have some understanding of the language. In this situation, it would appear that an interpreter who is fluent in both the air carrier’s primary language and the language of the foreign-speaking passengers would have to be used. An exit seating passenger information card would have to be developed in the foreign language and the interpreter would have to thoroughly brief the foreign-speaking passengers on the contents of that specially approved exit seating passenger information card. The interpreter would also have to provide the required exit seating oral briefing in the foreign language to ensure that the exit seating passengers are willing and able to perform the emergency functions. The interpreter would have to review the commands, which would be given by the crewmember in an emergency evacuation, in both the primary language of the air carrier and in the foreign language.

3) A designated crewmember should oversee this special briefing and make the determination that those passengers understand their responsibilities, meet the criteria, and are willing and able to perform the emergency functions, if called upon to do so. This procedure requires more time to implement prior to departure and the necessary time must be allotted for this special briefing.
4) In these and other similar situations, the air carrier would need to develop (in advance of the operation) and submit for approval specific procedures, special exit seating passenger information cards in the foreign language to be used, and crewmember training for that specific operation. The procedures must detail how the exit seating requirements would be met and who would be responsible for implementing the procedures and making the final determination as to the suitability of these passengers. The amended procedures must be sent to the POI and/or CSI (if applicable) for review. If the procedures satisfactorily meet the requirements, the exit seating program amendment for foreign-speaking passengers can be approved by the POI.

3-3573 EMERGENCY EVACUATION WITH INFANTS. Researchers from the CAMI have completed two studies designed to determine the most favorable methods for the emergency evacuation of infants from aircraft. All CAMI publications may be accessed at http://www.faa.gov/data_research/research/med_humanfacs/oamtechreports. The following information is intended for use in developing passenger information materials and/or briefing.

A. Infant Evacuation Via Inflatable Emergency Evacuation Slides. The purpose of the first study, published in 2001, was to determine the most favorable methods for the evacuation of infants via an inflatable emergency evacuation slide. The results of this study strongly suggest that jumping onto the slide should be the favored boarding manner, as opposed to sitting down and sliding, which slows the progress of the evacuation. The carrying position that provides the most protection for the child would include cradling the child’s head and neck with the hand (for a vertical position) or in the arm (for horizontal positions), and keeping the child’s arms, legs, and feet enfolded as much as possible by the adult’s arms. Both positions emphasize the importance of cradling the infant to protect its head, arms, and legs.

B. Infant Evacuation Via Type III Overwing Exits. The purpose of the second study was to determine the most favorable methods for evacuation of infants through a Type III overwing exit. The results of this study suggest that carrying the infant vertically, while cradling the infant to protect its head, arms, and legs, should be the favored evacuation maneuver through the Type III exit, as opposed to carrying the child horizontally or passing the child to another passenger on the outside of the Type III exit.

3-3574 USE OF PORTABLE ELECTRONIC DEVICES (PED). POIs and principal avionics inspectors (PAI) should review the provisions contained in §§ 91.21 and 121.380, and AC 91.21-1, Use of Portable Electronic Devices Aboard Aircraft (current edition), with their assigned operators. POIs and PAIs must ensure that their operators have adequate procedures in place to determine whether or not PEDs are acceptable for passenger use onboard their aircraft. POIs must ensure that their operators specify in their operations manuals those PEDs that may not be operated onboard their aircraft. Although §§ 121.571, 125.327, and 135.117 do not require that the following briefing information be given, POIs and CSIs should encourage their assigned operators to include information regarding the operation of PEDs in the pre-takeoff passenger safety briefings. These briefings should include any specific restrictions that apply to passenger use of portable electronic devices.

NOTE: An example briefing might be the following: “Some portable electronic devices may interfere with the aircraft’s communications and navigation systems.
Please refrain from using any electronic device other than portable voice recorders, hearing aids, and [the operator should add to this list of portable electronic devices, the generic identification of any device that it determines will not cause interference.] For your safety and the safety of others, please stow all carry-on portable electronic devices during taxi, takeoff, and landing.”

3-3575  BRIEFINGS ON INDIVIDUAL FLOTATION DEVICES. Individual flotation devices, for use by passengers, are not always identical on some aircraft. The differences in the equipment can be insignificant. For example, flotation cushions may have straps on the sides or straps across the bottom of the cushion. In either case, the instructions for use would be the same: “Insert your arms through the straps and hold the cushion to your chest.” The straps are not in the same place, but the same instructions would work regardless of the location of the straps. However, there are cases when the differences in the flotation cushions or the life preservers are significant.

A. Significant Differences in Life Preservers:
   - Some are donned by placing one part over the head,
   - Others are worn like a coat, and
   - Some have inflation handles that work differently.

B. Operators Use Various Methods to Inform Passengers of Using Dissimilar Flotation Equipment, such as:
   - Briefing passengers on the different types of flotation devices;
   - Displaying the differences on passenger cards and alluding to them in the briefing;
   - Using a combination of briefing and passenger cards; and
   - Briefing passengers (in rare cases) on only one design.

C. Policy. When a passenger is informed about more than one type of flotation cushion or life preserver, it can be confusing. One method for informing passengers is to give each passenger information about the piece of individual flotation equipment that is located at that individual passenger’s seat. In some cases, this may mean different cards at different seats and individual briefings at certain seats. When two sections on the same aircraft are equipped differently, each section would need a different passenger briefing. Another method for informing passengers is to advise them during the oral briefing that there are different types of flotation cushions on the airplane, therefore, it is important that they study the card carefully and be aware of the differences in the flotation equipment. The different methods of donning and/or operating the individual flotation device should be depicted on the card and given in the oral briefing or demonstration (if extended over-water flight).

3-3576  LOCATION AND PLACEMENT OF SERVICE ANIMALS ON AIRCRAFT.

A. Background. As early as 1977, the FAA recognized the need for guidance regarding the placement and location of service animals on aircraft. AC 120-32, Air Transportation of Handicapped Persons (current edition), discusses the placement of guide dogs and states they...
should sit in the first row of seats of a section next to the bulkhead where there is more room for
the dog. In 1990, the DOT published part 382. On May 9, 2003, the DOT issued revised
guidance regarding the carriage of service animals affecting all transportation modes, including
aviation.

B. FAA Review of NTSB Part 121 Accident Reports. The FAA has reviewed all
available NTSB accident reports for part 121 commercial aircraft accidents with at least one
fatality occurring between January 1, 1990, and November 28, 2007. The FAA found no
information that the presence of a service animal or its placement or location on an airplane
negatively impacted an airplane evacuation or a particular individual’s emergency exit from an
airplane.

C. FAA Review of NTSB Safety Reports. The FAA also reviewed NTSB Safety
Report 01/01, Survivability of Accidents Involving Part 121 U.S. Air Carrier Operations, 1983
Through 2000, and NTSB Safety Study 00/01, Emergency Evacuation of Commercial Airplanes,
and again found no information that either the presence of a service animal or its placement or
location on the airplane negatively impacted an airplane evacuation or a particular individual’s
emergency exit from an airplane.

D. Part 382 Requirements. The variety of service animals, as well as the services these
animals perform, has become larger in scope since the FAA’s policy was first published in 1977.
However, a comprehensive review of available NTSB data does not identify a hazard that
compels the FAA to change its long-standing safety and enforcement policy regarding placement
and location of service animals on aircraft. Therefore, consistent with part 382 requirements:

1) Placement. A service animal may remain at the feet of a person with a disability
at any bulkhead seat, or in any other seat, as long as when the animal is seated/placed/curled up
on the floor, no part of the animal extends into the main aisle(s) of the aircraft, the service animal
is not at an emergency exit seat, and the service animal does not extend into the foot space of
another passenger seated nearby who does not wish to share foot space with the service animal.

2) Placement of Lap-Held Service Animals. The preamble to part 382, issued in
1990 (55 FR 8042), discusses lap-held service animals (such as a monkey used by a person with
mobility impairments). They are service animals that need to be in a person’s lap to perform a
service for that person. This service animal may sit in that person’s lap for all phases of flight
including ground movement, takeoff, and landing, provided that the service animal is no larger
than a lap-held child (a child who has not reached his or her second birthday).

3) Documentation. One type of service animal is an animal used for emotional
support. The presence of such an animal is found to be medically necessary for the passenger
traveling with the animal. Under DOT rules, and outlined clearly in DOT’s Guidance
Concerning Service Animals in Air Transportation, published on May 9, 2003, an air carrier may
require documentation regarding the medical need for the presence of an emotional support
animal as a condition of permitting the animal to accompany the passenger in the cabin as a
service animal.
4) **Unusual Service Animals.** As stated in the DOT guidance issued on May 9, 2003, unusual service animals pose unavoidable safety and/or public health concerns and airlines are not required to transport them. Snakes, other reptiles, ferrets, rodents, and spiders fall within this category of animals. The release of such an animal in the aircraft cabin could result in a direct threat to the health or safety of passengers and crewmembers. For these reasons, airlines are not required to transport these types of service animals in the cabin, and carriage in the cargo hold will generally be in accordance with company policies on the carriage of animals.

5) **Other Unusual Animals.** Air carriers should evaluate unusual animals, such as miniature horses, pigs, and monkeys, on a case-by-case basis. Factors to consider are the animal’s size and weight, State and foreign country restrictions, and whether or not the animal would pose a direct threat to the health or safety of others or cause a fundamental alteration (significant disruption) in the cabin service. If none of these factors apply, the animal may accompany the passenger in the cabin. In most other situations, the air carrier should carry the animal in the cargo hold, in accordance with company policy.

6) **Policy Coordination.** The FAA has coordinated this safety and enforcement policy with the FAA Office of the Chief Counsel, Operations Law Branch (AGC-220).

E. **Reference Materials.** The following reference materials provide additional information (current editions):


3-3577 USE OF ORTHOTIC POSITIONING DEVICES (OPD) BY PEOPLE WITH DISABILITIES IN AIRCRAFT SEATS.

A. **Assistive Devices.** To a limited degree, AC 120-32 discusses issues surrounding the use of assistive devices such as crutches, splints, casts, and braces by passengers on aircraft. However, the FAA issued this guidance well before the publication of part 382 in 1990.
In addition, there have been many innovations in the scope and type of assistive devices since 1977. OPDs are one of the more recent examples of innovation in assistive devices.

B. Seat Belt as Primary Method of Restraint. This guidance addresses one type of OPD used by people with disabilities to position and support themselves in such a way that they can use the aircraft’s seat belt as an effective and primary method of restraint. Each OPD is specifically designed to meet the support needs of an individual and there are different manufacturers of OPDs.

C. Persons Supported by OPD. “Orthotic” means a support or brace for weak or ineffective joints or muscles. An OPD is a device or supportive brace that is designed and used to help support and position a person who has:

- Significant postural asymmetries of the pelvis, trunk, and/or hips that lack flexibility;
- Significant hypertonia or hypotonia, spasticity, or mixed athetoid dysfunctions;
- Absent or impaired sensation in an area of contact with a seating surface; or
- A past history of, or current, pressure ulcer(s) on an area of contact with a seating surface.

D. OPD-Assisted Disabilities. People who have difficulty controlling the movement of their body or have muscle spasms that cause their body to extend involuntarily may use an OPD. Some examples of this type of disability include, but are not limited to, cerebral palsy and spastic quadriplegia.

E. OPD Requirements. The type of OPD discussed in this guidance must be equipped with internal restraints to position a person in the device to provide that person security and support. The person sits in the OPD while they and the OPD are occupying an aircraft seat. The person is therefore properly positioned to use the existing aircraft seat belt as his or her primary restraint device by securing it around them while using the OPD for support. The OPD must not attach to the seat. The OPD only provides support; the aircraft seat belt provides restraint.

F. The Purpose of OPDs. The use of this type of OPD is similar to the use of any other medically required assistive/positioning device, such as a back brace or a neck brace. The purpose of an OPD is to ensure a person requiring this type of assistive device is positioned properly and safely in order to effectively use the aircraft seat belt as his or her primary means of restraint. This type of OPD is not intended to be identified, sold, or used as a CRS. The use of this type of OPD is permitted on aircraft and is not prohibited by current regulations.

G. Where Persons May Use OPDs on Aircraft. A person may use an OPD in any seat on the aircraft, except an exit seat, provided the use of the OPD does not block any passenger’s evacuation from the aircraft.

H. Crewmember Requirements. Crewmembers are not required to know how to operate the internal restraints of the OPD. This is the responsibility of the person who is using the OPD or his or her caregiver. Crewmembers are only responsible for ensuring that the person
using the OPD or his or her caregiver properly uses the aircraft seat belt (the primary method of restraint).

I. OPD Acceptance Criteria. Because each OPD is specifically designed to meet the support needs of an individual, the structure of the OPD and the internal harness system may vary. To assist crewmembers in evaluating whether the use of this type of assistive device is acceptable, it is important to keep two key points in mind:

1) The person must have a medical need to use the OPD. In most situations, the need to use an OPD will be readily apparent. In any case, observation of the person or obtaining credible verbal assurances from the person or his or her attendant will be considered sufficient to determine medical need.

2) When the person is using the OPD, the aircraft seat belt secures around him or her and provides the primary method of restraint.

J. Guidance Limitations. This guidance is specific to one type of OPD used by a person with a disability to allow the aircraft seat belt to be the primary method of restraint. This guidance does not mean that any type of restraint used by people with disabilities is exempt from the regulations regarding the use of restraint systems and it does not preclude the air carrier’s responsibility from making a safety judgment based on specific compliance with applicable regulations. A petition for exemption is the appropriate course of action regarding a device that does not meet the criteria in this guidance or the requirements established in the pertinent regulations regarding restraint on aircraft. Information regarding the submission of a petition for exemption is available at http://www.faa.gov/regulations_policies/rulemaking/petition.

NOTE: While the FAA does not endorse a particular manufacturer’s OPD, the following Web sites contain information regarding the general type of OPD described in this paragraph:

Figure 3-129. Exit Seating Program Job Aid

<table>
<thead>
<tr>
<th>Field</th>
<th>Information Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certificate Holder Name:</td>
<td></td>
</tr>
<tr>
<td>Doing Business As (DBA):</td>
<td></td>
</tr>
<tr>
<td>Address:</td>
<td></td>
</tr>
<tr>
<td>Certificate Holder Certificate No.:</td>
<td></td>
</tr>
<tr>
<td>POI Name:</td>
<td></td>
</tr>
<tr>
<td>Office and Phone Number:</td>
<td></td>
</tr>
<tr>
<td>Review Completed:</td>
<td></td>
</tr>
<tr>
<td>Signature and Date:</td>
<td></td>
</tr>
<tr>
<td>Date Program Approved:</td>
<td></td>
</tr>
<tr>
<td>Date AFS-500 Notified:</td>
<td></td>
</tr>
<tr>
<td>Comments:</td>
<td></td>
</tr>
</tbody>
</table>

REQUIRED ATTACHMENTS: Detailed on attached pages—complete the lines with Y (for Yes) or N (for No):

<table>
<thead>
<tr>
<th>Attachment Type</th>
<th>Information Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exit Seating Procedures:</td>
<td></td>
</tr>
<tr>
<td>Airport Information:</td>
<td></td>
</tr>
<tr>
<td>Passenger Seating Cards:</td>
<td></td>
</tr>
<tr>
<td>Aircraft Floor Plans:</td>
<td></td>
</tr>
</tbody>
</table>

EXIT SEATING PROCEDURES. Procedures should be submitted as manual sections/training program sections/bulletins, etc., as appropriate to the individual carrier. Attach all applicable sections pertinent to exit seating only.

NOTE: The POI should check for applicability and manual format and ensure that all applicable publications are revised. *The procedures must address the following regulatory requirements, and must address when, how, and by whom the items will be addressed.*
## Figure 3-129. Exit Seating Program Job Aid (Continued)

<table>
<thead>
<tr>
<th>SELECTION CRITERIA: Reference §§ 121.585(b) and 135.129(b).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do carrier procedures address when, how, and by whom the screening and/or selection will be accomplished?</td>
</tr>
<tr>
<td>Do carrier procedures address the following selection criteria?</td>
</tr>
<tr>
<td>1. Does a person lack sufficient strength, dexterity, or mobility in both arms and hands, and both legs to perform the following functions?</td>
</tr>
<tr>
<td>a. Reach upward, sideways, and downward to the location of emergency exit and exit slide operating mechanisms.</td>
</tr>
<tr>
<td>b. Grasp and push, pull, turn, or otherwise manipulate those mechanisms.</td>
</tr>
<tr>
<td>c. Push, shove, pull, or otherwise open emergency exits.</td>
</tr>
<tr>
<td>d. Lift out, hold, deposit on nearby seats, or maneuver over the seat backs to the next row objects the size and weight of overwing exit doors.</td>
</tr>
<tr>
<td>e. Remove obstructions similar in size and weight of overwing exit doors.</td>
</tr>
<tr>
<td>f. Reach the emergency exit expeditiously.</td>
</tr>
<tr>
<td>g. Maintain balance while removing obstructions.</td>
</tr>
<tr>
<td>h. Exit expeditiously.</td>
</tr>
<tr>
<td>i. Stabilize an escape slide after deployment.</td>
</tr>
<tr>
<td>j. Assist others in getting off an escape slide.</td>
</tr>
<tr>
<td>2. Is the person less than 15 years of age or does the person lack the capacity to perform one or more of the functions listed in §§ 121.585(d) and 135.129(d) without the assistance of an adult companion, parent, or other relative?</td>
</tr>
<tr>
<td>3. Does the person lack the ability to read and understand instructions related to emergency evacuation provided by the certificate holder in printed or graphic form or the ability to understand oral crew commands in the language used by the carrier?</td>
</tr>
<tr>
<td>4. Does the person lack a sufficient visual capacity to perform one or more of the functions listed in §§ 121.585(d) and 135.129(d) without the assistance of visual aids beyond contact lens or eyeglasses?</td>
</tr>
<tr>
<td>5. Does the person lack a sufficient aural capacity to hear and understand instructions shouted by crewmembers without assistance beyond a hearing aid?</td>
</tr>
<tr>
<td>6. Does the person lack the ability to adequately impart information orally to other passengers?</td>
</tr>
<tr>
<td>7. Does the person have either of the following?</td>
</tr>
<tr>
<td>a. A condition or responsibility, such as caring for small children, that would prevent the person from performing one or more of the functions listed in §§ 121.585(d) and 135.129(d).</td>
</tr>
<tr>
<td>b. A condition that might cause the person harm if he or she performs one or more of the listed functions.</td>
</tr>
</tbody>
</table>
### SEATING ASSIGNMENTS/VERIFICATION PROCEDURES

Are exit seats identified for seat assignment purposes?

Refer to §§ 121.585(g) and 135.129(g). Does the certificate holder have a procedure that taxi or pushback will not be allowed until at least one required crewmember has verified that no exit seat is occupied by a person the crewmember determines is likely to be unable to perform the functions listed in §§ 121.585(d) and 135.129(d)?

Are verifying crewmembers specifically identified?

Refer to §§ 121.585(j)(k) and 135.129(j)(k). Does the certificate holder have procedures to honor a passenger’s request to be relocated and the procedures for relocation?

Does the procedure note that a passenger does not need to disclose his or her reason for the request?

Refer to §§ 121.585(l) and 135.129(l). Does the certificate holder have procedures to move a passenger to accommodate a relocated passenger in the event of full booking of non-exit seats?

### DENIAL OF TRANSPORTATION/RESOLVING DISPUTES

Refer to §§ 121.585(m) and 135.129(m). Does the certificate holder have procedures to deny transportation because of either or both of the following?

1. The passenger refuses to comply with instructions.
2. The only seat that will physically accommodate the person’s handicap is an exit seat.

Refer to §§ 121.585(n) and 135.129(n). Does the certificate holder have procedures for resolving disputes, including identification of the employee at the airport to whom complaints should be addressed for resolution?

### ORAL BRIEFING PROCEDURES

Refer to §§ 121.585(i) and 135.129(i). Does the oral briefing reference the following?

1. Passenger information cards.
2. The selection criteria in §§ 121.585(b) or 135.129(b).
3. The functions to be performed under §§ 121.585(d) or 135.129(d).
4. A request for reseating if any of the following conditions are met:
   a. Cannot meet the selection criteria.
   b. Has an indiscernible condition that would prevent him or her from performing the listed functions.
   c. May suffer bodily harm as a result of performing one or more of those functions.
   d. Does not wish to perform those functions.
**Figure 3-129. Exit Seating Program Job Aid (Continued)**

<table>
<thead>
<tr>
<th>AIRPORT INFORMATION</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Refer to §§ 121.585(f) and 135.129(f). Does the certificate holder have written procedures for making determinations regarding exit seating available for inspection by the public at all passenger loading gates and ticket counters at each airport where it conducts passenger operations?</td>
<td></td>
</tr>
<tr>
<td>Is a copy of the information attached?</td>
<td></td>
</tr>
<tr>
<td>Is the content complete and the method of inspection identified, such as flyers, signs, and so forth?</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PASSENGER INFORMATION CARDS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Are copies of applicable cards attached?</td>
<td></td>
</tr>
<tr>
<td>Are cards appropriate to carrier’s aircraft and configurations?</td>
<td></td>
</tr>
<tr>
<td>Do procedures address the use and location of cards?</td>
<td></td>
</tr>
<tr>
<td>Refer to §§ 121.585(d) and 135.129(d). Do the briefing cards contain the following functions?</td>
<td></td>
</tr>
<tr>
<td>1. Locate the emergency exit.</td>
<td></td>
</tr>
<tr>
<td>2. Recognize the emergency exit opening mechanism.</td>
<td></td>
</tr>
<tr>
<td>3. Comprehend the instructions for opening the emergency exit.</td>
<td></td>
</tr>
<tr>
<td>4. Operate the emergency exit.</td>
<td></td>
</tr>
<tr>
<td>5. Assess whether opening the emergency exit will increase the hazards to passengers being exposed.</td>
<td></td>
</tr>
<tr>
<td>6. Follow oral directions and hand signals given by a crewmember.</td>
<td></td>
</tr>
<tr>
<td>7. Stow or secure the emergency exit door so that it will not impede the use of the exit.</td>
<td></td>
</tr>
<tr>
<td>8. Assess the condition of the escape slide, activate the slide, and stabilize the slide after deployment to assist others in getting off the slide (where applicable to aircraft type).</td>
<td></td>
</tr>
<tr>
<td>9. Explain how to pass expeditiously through the emergency exit.</td>
<td></td>
</tr>
<tr>
<td>10. Explain how to assess, select, and follow a safe path away from the emergency exit.</td>
<td></td>
</tr>
</tbody>
</table>

Does the briefing card contain the selection criteria listed in §§ 121.585(b) and 135.129(b)?

Does the briefing card contain a request that a passenger identify himself or herself to allow reseating if he or she meets one of the following criteria?

1. Cannot meet the selection criteria.
2. Has an indiscernible condition that would prevent him or her from performing the listed functions.
3. May suffer bodily harm as a result of performing one or more of those functions.
4. Does not wish to perform those functions.
5. Lacks the ability to read, speak, or understand the language or the graphic form specified by the carrier, or lacks the ability to understand oral crew commands (in every language used by the certificate holder for the card).
Figure 3-129. Exit Seating Program Job Aid (Continued)

<table>
<thead>
<tr>
<th>AIRCRAFT FLOOR PLANS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are the aircraft passenger seating floor plans submitted for each aircraft make, model, and series, and for each passenger seating configuration used by the certificate holder?</td>
</tr>
<tr>
<td>Are exits and exit seats identified?</td>
</tr>
<tr>
<td>List aircraft operated:</td>
</tr>
<tr>
<td>Aircraft Make/Model/Series</td>
</tr>
</tbody>
</table>

**RESERVED.** Paragraphs 3-3578 through 3-3590.
VOLUME 3 GENERAL TECHNICAL ADMINISTRATION

CHAPTER 37 EVALUATE A PART 121/135.411(a)(2) CERTIFICATE HOLDER’S SHORT-TERM ESCALATION PROCEDURES

Section 1 Safety Assurance System: Evaluating Short-Term Escalation Procedures

3-3706 REPORTING SYSTEM(S).

A. Safety Assurance System (SAS). This section is related to SAS Element 4.4.3 (AW), Short-Term Escalations.

B. Program Tracking and Reporting Subsystem (PTRS). Use PTRS activity codes 3320 and 5320.


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 an FAA
Certificate-holding district office (CHDO)/certificate management office (CMO) authorization on a case-by-case basis.

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 noncompliance 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 notify the CHDO/CMO of the issuance of the short-term escalation.
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.

**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).

NOTE: Do not confuse short-term escalations with exceptional short-term extensions. Volume 6, Chapter 11, Section 23 provides guidance concerning exceptional short-term extensions. An operator may extend certain fuel system ALs up to the maximum number of days specified in the applicable Airworthiness Limitation Section (ALS) for a specific airplane without FAA Oversight Office approval.

**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). 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 escalated (see subparagraph 3-3708C). 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 the 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 when the sole justification is a military contract requirement. 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, when the sole justification is a military contract requirement.

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 nonstandard OpSpec 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. Forms. None.


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 § 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, Aircraft Maintenance—Continuous Airworthiness Maintenance Program (CAMP) Authorization; 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 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 for 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 and 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.

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. **Follow SAS Guidance for Module 4.**

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.

3-3713 **FUTURE ACTIVITIES.** Follow SAS guidance for Module 5.

**RESERVED.** Paragraphs 3-3714 through 3-3730.
Section 1  Safety Assurance System: Evaluate the Operator’s 14 CFR Parts 121, 121/135, 125, and 129 Aircraft Network Security Program

3-4887  REPORTING SYSTEM(S).

   A. Program Tracking and Reporting Subsystem (PTRS) Activity Codes.
      • 5315 (initial); and
      • 5316 (revision).

   B. Safety Assurance System (SAS) Automation. This section is related to SAS Elements 4.6.1 (AW), Avionics Special Emphasis Programs.

3-4888  APPLICABILITY.

   A. Aircraft Network Security Program (ANSP) Requirement. The requirement for an ANSP is dependent on aircraft design and intended operation. An aircraft requiring an ANSP is one that is certified with a special condition (SC) reflected on the aircraft Type Certificate Data Sheet (TCDS) requiring operator actions to mitigate electronic security risks. These mandatory actions are found in the design approval holder’s (DAH) maintenance or operational procedures as required by the special condition. For the purpose of this chapter, these aircraft will be referred to as “connected aircraft.”

   B. Connected Aircraft. A connected aircraft operated under Title 14 of the Code of Federal Regulations (14 CFR) parts 121, 121/135, 125, and 129 require an ANSP. Operations under 14 CFR parts 91, 125M, and 135 are not required to have an ANSP. However, parts 91, 125M, and 135, as a condition for issuance of an airworthiness certificate, are required to follow the DAH procedures or instructions for continued airworthiness (ICA) developed to meet SCs addressing electronic system security. The DAH procedures must be included in the maintenance and operational programs.

      NOTE: Some aircraft may have an SC for electronic security that applies to the DAH design only and does not require operator action. These aircraft do not need an ANSP or maintenance and operational procedures.
3-4889 OBJECTIVE. This section contains information and guidance that the principal avionics inspectors (PAI) use when evaluating an operator’s ANSP. Upon official notification that an operator intends to add connected aircraft to their fleet, the PAI must consult the Flight Standards Service (AFS) Aircraft Maintenance Division, Avionics Branch (AFS-360) at (202) 267-1704. This will provide for early coordination to ensure all program requirements are met prior to issuing operations specification (OpSpec) D301. The PAI is responsible for acceptance of the program with the concurrence of AFS-360. Personnel from the Office of Information and Technology Services (AIT) Security and Privacy Risk Management Staff (AIS-020) will support AFS-360 in the evaluation.

NOTE: Because of this unique application of computer technology, AFS-360 will collaborate with AIS-020 to provide technical information technology (IT) security support. AFS-360 will rely on AIS-020 personnel for their expertise in IT cyber security to assist in evaluating the operator’s security program. The PAI will make airworthiness evaluations with assistance and recommendations from the assigned AFS-360 aviation safety inspector (ASI).

NOTE: The PAI may require concurrence of ASIs in other specialties to assure all aspects of training are addressed, and to assure that the full operational impact of the connected aircraft configuration is assessed.

3-4890 GENERAL. This section contains a general overview of the requirements for evaluating an ANSP under parts 121, 121/135, 125, and 129. This section contains information and guidance about granting authorization for an operator’s ANSP.

NOTE: OpSpec D301 for part 125 certificate holders does not apply to part 125M Letter of Deviation Authority (LODA) operators. It applies to U.S.-registered aircraft operated under part 129, and does not apply to part 129 operators that do not have U.S.-registered aircraft. It applies to all aircraft operated under part 129, § 129.14.

3-4891 ACTION. The ANSP is authorized in OpSpec D301. Log in to the Web-based Operations Safety System (WebOPSS) and follow on-screen prompts to complete the authorization.

3-4892 NEW USE OF TECHNOLOGY. Previously, aircraft designers used aviation (ARINC 429/629) or Military Standard (MIL-STD) data buses to interconnect flight critical avionics systems. Advance connectivity technology was used only to support the passenger information and entertainment systems, which were physically and logically separated from the flight critical avionics systems. New aircraft designs use advanced technology for the main aircraft backbone connecting flight critical avionics as well as passenger information and entertainment systems in a manner that makes the aircraft an airborne interconnected network.
A. External Systems Access. The architecture of this airborne network may allow read and/or write access to and/or from external systems and networks, such as wireless airline operations and maintenance systems, satellite communications, email, the Internet, etc. Onboard wired and wireless devices may also have access to portions of the aircraft’s digital data buses that provide flight-critical functions.

NOTE: The design of these connected aircraft makes it difficult to maintain the certificated configuration of the aircraft without following procedures documented in an ANSP. OpSpec D301 is necessary to verify that operators have the skills, tooling, and procedures in place to accomplish the requirements of the DAH’s aircraft operator security guidance.

B. Risk. Connected aircraft have the capability to reprogram flight critical avionics components wirelessly and via various data transfer mechanisms. This capability alone, or coupled with passenger connectivity on the aircraft network, may result in cyber security vulnerabilities from intentional or unintentional corruption of data and/or systems critical to the safety and continued airworthiness of the airplane. Credible examples of risks include the potential for:

- Malware to infect an aircraft system,
- An attacker to use onboard wireless to access aircraft system interfaces,
- Denial of service of wireless interfaces,
- Denial of service of safety critical systems,
- Misuse of personal devices that access aircraft systems, and
- Misuse of off-board network connections to access aircraft system interfaces.

3-4893 REGULATORY REQUIREMENTS. The existing regulations did not anticipate this type of system architecture or electronic access to aircraft systems that provide flight-critical functions. Title 14 CFR and current system safety assessment policy and techniques do not address potential cyber security vulnerabilities that unauthorized access to aircraft data buses and servers could cause. In accordance with 14 CFR part 11, § 11.19, as described in 14 CFR part 21, § 21.16, aircraft network systems are certificated through various means, including but not limited to type certificates (TC) and Supplemental Type Certificates (STC) that include SC requirements of the instructions for continued airworthiness (ICA). Title 14 CFR part 43, § 43.13 requires each person performing maintenance, alteration, or preventive maintenance on an aircraft, engine, propeller, or appliance to use the methods, techniques, and practices prescribed in the current manufacturer’s maintenance manual or ICA prepared by its manufacturer; or other methods, techniques, and practices acceptable to the Administrator. PAIs will determine that an operator’s ANSP is in compliance with applicable regulations and manufacturer’s instructions. The manufacturer’s instructions may be in the form of a recommended aircraft security program, airworthiness limitations (AL), or other instructions.
3-4894 REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions):

- Advisory Circular (AC) 119-1, Airworthiness and Operational Authorization of Aircraft Network Security Program (ANSP).

B. Forms. None.

C. Job Aids. None.

3-4895 OPERATOR ACTION.

A. Develop an ANSP. Operators of connected aircraft must develop and maintain an ANSP that is sufficiently comprehensive in scope and detail to accomplish the following:

1) Ensure that security protection is sufficient to prevent access by unauthorized sources external to the aircraft.

2) Ensure that security threats specific to the certificate holder’s operations are identified and assessed, and that risk mitigation strategies are implemented to ensure the continued airworthiness of the aircraft.

3) Prevent inadvertent or malicious changes to the aircraft network, including those possibly caused by maintenance activity.

4) Prevent unauthorized access from sources onboard the aircraft.

NOTE: AIS-020 will be the focal point for verifying the items in subparagraphs 3-4895A1) through A4).

B. Guidelines for Authorization. Operators of connected aircraft during initial certification (including the addition of new types of connected aircraft) should ensure that the initial compliance statement clearly describes the procedures that the operator will use for the ANSP. The operator must develop a section in its General Maintenance Manual (GMM) or other appropriate manual that provides detailed instruction on:

- Roles and responsibilities, including persons with authority and responsibility;
- Training/qualifications;
- Control of maintenance laptop/ground support equipment access and use;
- Control of access to airport wired and wireless service network;
- Controlling access to Loadable Software Airplane Part (LSAP) librarian resources;
- Creating secure parts signing process and controlling access to private keys;
- Control/monitor of physical access to aircraft;
- Control of aircraft conformity to type design, as amended;
- Provisions for parts pooling and parts borrowing;
- Procedures for part exchanges within its own fleet;
- Event recognition and response;
- Event evaluation process with considerations for program improvements; and
- Security environment description.

C. Verify. The PAI should encourage the operator to submit the request for authorization for OpSpec D301, along with ANSP documents at least 60 days prior to planned operation of the connected aircraft. Working with AFS-360, the PAI will verify that the operator has established appropriate event recognition, response processes, and security awareness training within their respective program area.

3-4896 PROCESS. PAIs, with assistance from AFS-360, will collaborate with certificate holders to determine the mandatory and recommended requirements of the manufacturer’s security document.

A. Verify the Most Recent Version. Verify that the certificate holder has the most recent version of the manufacturer’s security document. Use the following resources to determine the most recent version:

- Airworthiness Limitation Section (ALS) of the Aircraft Maintenance Manual (AMM).
- Aircraft Certification Office (ACO).
- Aircraft Evaluation Group (AEG).

B. Compare the Requirements and Recommendations. Compare the requirements and recommendations in the manufacturer’s security document to those in the ANSP. Verify that the certificate holder addresses the requirements, and that any recommendations appropriate to the certificate holder operations are included.

NOTE: It is not necessary for the PAI to verify the technical aspects of data security. AIS-020 will accomplish this during headquarters (HQ) review.

C. Verify the Appropriate Changes. Verify that appropriate changes are reflected in the certificate holder maintenance program and that the GMM or equivalent manual is revised accordingly. For example, if an ANSP states there is a process to validate the manufacturer’s digital signature on software parts received, that process should be described in the “Parts Receiving” section of the GMM. Also, if ANSP sensitive parts are received from a parts pool, the parts pooling procedures should address this.

D. Review the ANSP. During initial implementation of OpSpec D301, the regional specialist is not tasked to review the ANSP.
E. **Complete the Package.** The PAI will submit the request directly to AFS-360, with a courtesy copy to the regional specialist. Whenever possible, to allow for the most timely and efficient review, the ANSP package will be submitted electronically via email with return receipt requested. The AFS-360 ASI will submit the ANSP to the assigned AIS-020 security specialist for a concurrent review. The AFS-360 ASI and/or the AIS-020 security specialist may collaborate directly with the PAI, the certificate holder, or the regional specialist to satisfy any issues or concerns. When satisfied, AFS-360 will return the complete package to the PAI with a cover letter recommending authorization of OpSpec D301. AFS-360 will provide a courtesy copy of the cover letter to the regional Flight Standards specialist.

F. **Data Security Manager.** Although not a requirement for every manufacturer’s security document, it is critical that the ANSP identify a data security manager. The identity may be by title, organization, and office in the ANSP, provided the certificate holder submits a letter in writing to the certificate-holding district office (CHDO) with the name and contact information for the data security manager. The ANSP should state that the operator shall notify the CHDO within 5 days of subsequent changes to the data security manager. The data security manager is the person with primary responsibility for the ANSP and serves as the focal point for interface with the Federal Aviation Administration (FAA) regarding data security.

**3-4897 MERGERS, ACQUISITIONS, AND PROGRAM CHANGES.** When two or more ANSPs consolidate because of a merger or acquisition, the consolidation of those programs is of particular importance. The PAI must give priority to the accurate consolidation of those programs. Once the PAI accepts the surviving program, the operator should take action to ensure security records, reports, and logs are maintained, archived, or transferred as appropriate from the existing program into the surviving program. During this transition, the PAI will determine the time period required for maintaining the two systems in parallel operation. The surviving program should have at least the same capability as the existing program. The integration of the existing and surviving programs must maintain the integrity of the security system.

**3-4898 CONTRACT MAINTENANCE PROVIDERS.** The operator must ensure the contract maintenance provider complies with its ANSP as required by part 121, § 121.363(b) or part 125, § 125.245. The operator will verify compliance with this requirement by use of the audit process required by its Continuing Analysis and Surveillance System (CASS) and Continuous Airworthiness Maintenance Program (CAMP) as required by §§ 121.373 and 121.374, or § 125.247(e). A certificated repair station (CRS) that performs maintenance, preventive maintenance, or alterations for an operator that has an ANSP authorized under OpSpec D301 must follow the operator’s program as required by 14 CFR part 145, § 145.205.

**3-4899 TASK OUTCOMES.**

A. **Complete the PTRS.** Use PTRS code 5315 for initial ANSP authorization or 5316 for revision thereof. In the “National Use” field, enter “ANSP Init” for initial authorization or “ANSP Rev” for any revisions to OpSpec D301 or any significant security program revisions even if OpSpec D301 is not revised. The PAI must document all reasons to deny the authorization in the comments section of the PTRS record.
B. Future Activities. Routine surveillance can be found in SAS Elements 4.6.1 (AW), Avionics Special Emphasis Program. PAIs will conduct periodic routine surveillance of an operator’s ANSP to verify that the operator maintains network security and that the operator has made no significant changes to the program without PAI concurrence. PAIs will verify that the records and security logs continue to contain the required information to show compliance. If the operator makes changes to the ANSP (even when the change is driven by a revision to the manufacturer’s security document), or adds additional models of connected aircraft, the PAI will consult AFS-360 to determine if the program requires reevaluation. In accordance with Volume 3, Chapter 18, Section 2 of this order, any changes requiring reissuance of D301 requires AFS-360 approval. As new connected aircraft are delivered to operators, AFS-360 is taking a proactive approach to reach out to the affected PAIs to inform, and assist them in initial implementation of OpSpec D301.

NOTE: AIS-020 may provide additional recommended surveillance tasks in the future.

RESERVED. Paragraphs 3-4900 through 3-4916.
VOLUME 4 AIRCRAFT EQUIPMENT AND OPERATIONAL AUTHORIZATIONS

CHAPTER 2 ALL WEATHER TERMINAL AREA OPERATIONS

Section 2 Safety Assurance System: Approval of U.S. Operators for Special Authorization Category I and All Category II/III Operations—Parts 91 (Large Aircraft), 91K, 121, 125, and 135

4-187 OVERVIEW. The general process of approval or acceptance of certain operations, programs, documents, procedures, methods, or systems is an orderly method used by Flight Standards Service (AFS) inspectors to ensure that such items meet regulatory standards and provide for safe operating practices. It is a modular, generic process that is ideally suited for the approval of Special Authorization (SA) Category I (CAT I) and Category II/III (CAT II/III) (including SA CAT II) programs that are solicited by operators from the Federal Aviation Administration (FAA). The process consists of five distinct, yet related, phases and can result in approving or not approving an operator’s CAT II and/or CAT III application. It is important for an inspector to understand that the process described in this section is not all-inclusive, but is rather a tool to be used with good judgment in conducting day-to-day duties and responsibilities. A flow diagram of the process is found in Figure 4-4, Category II/III Evaluation and Approval Process Flow Diagram for Parts 91, 91K, and 125. Title 14 of the Code of Federal Regulations (14 CFR) parts 121 and 135 operators have traditionally been the industry leaders of low visibility innovations and equipage. As such, these operators have been the focus of the FAA’s low visibility approval process. In recent years, the business jet community has gained parity with the airlines in terms of equipage, and their fleet size rivals that of major airlines. The FAA applies the same approval process for 14 CFR parts 91 subpart K (part 91K), 125, and large part 91 aircraft operators as for parts 121 and 135.

4-188 APPLICABILITY. The purpose of this task is to provide operational system safety oversight, analysis, and guidance to principal inspectors (PI) and All Weather Operations Specialists (AWOS) on the authorization of operators to conduct instrument landing system (ILS) approach operations. The principal operations inspector (POI) authorizes the SA CAT I and all CAT II/III operations via the issuance of an operations specification (OpSpec), management specification (MSpec), or letter of authorization (LOA). Additionally, ILS CAT II and III approval requires concurrence of the regional Flight Standards division (RFSD). The Regional Next Generation (NextGen) Branch (RNGB) (AXX-220) is the point of contact (POC) for CAT II/III operator approval. The process in this section applies to U.S. operators conducting operations under part 91 (large aircraft), 91K, 121, 125, or 135 who pursue FAA SA CAT I and CAT II/III operational approval. For rotorcraft, CAT II authorization in accordance with this section also permits Copter ILS operations to a decision height (DH) of less than 200 feet.

A. Part 129 CAT II/III Authorization. The appropriate International Field Office (IFO)/International Field Unit (IFU) is responsible for authorizing 14 CFR part 129 foreign air carriers for CAT II/III operations, which is based primarily on a CAT II/III authorization from the State of Operator. Volume 4, Chapter 2, Section 8 contains an overview of guidance on how to authorize a part 129 foreign air carrier to conduct SA CAT I and CAT II/III operations. SA CAT I and CAT II/III authorizations for foreign air carriers are completed in accordance with guidance found in Volume 12, Chapter 2, Section 5.
B. Small Category A Aircraft Authorization. Volume 4, Chapter 2, Section 3 contains the CAT II approval process for small (less than 12,500 pounds) Category A aircraft, including small Category A airplanes and rotorcraft operating under the deviation authority prescribed in part 91, § 91.193.

4-189 REPORTING SYSTEM(S).

A. Safety Assurance System (SAS). For parts 121 and 135, POIs shall utilize SAS Data Collection Tools (DCT) 2.2.2 (OP), Category II & III Operations, and 2.3.1 (OP), Appropriate Operation Equipment.

B. Program Tracking and Reporting Subsystem (PTRS). For parts 91, 91K, and 125, use PTRS activity codes. POIs shall make a PTRS entry to record the actions directed by this section. The PTRS entry shall be listed according to the applicable phase as annotated below. POIs should use the comments section to record comments about interaction with the operators. The applicable PTRS codes for this task are as follows:

- Category II/III ILS Operations (OPS) Phase I Approval for an Operator: 1430.
- Category II/III ILS OPS Phase II Approval for an Operator: 1431.
- Category II/III ILS OPS Phase III Approval for an Operator: 1432.
- Category II/III ILS OPS Phase IV Approval for an Operator: 1433.
- Category II/III ILS OPS Phase V Approval for an Operator: 1434.

4-190 PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. This task requires knowledge of National Airspace System (NAS) operational requirements; knowledge of FAA certification rules, policies, and operational system requirements; knowledge of reduced visibility flight operations, aircraft systems, and certification requirements; skill in applying system safety principles; and the ability to link local issues with the broader regional, national, and international concerns.

B. Coordination. This task requires coordination between the POI, principal maintenance inspector (PMI), principal avionics inspector (PAI), and RNGB (AXX-220), and may also require coordination with the operator, training vendors, and aircraft/avionics manufacturers.

4-191 REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions):

- Title 49 of the United States Code (49 U.S.C.) §§ 40101(a), 40103(e), 40113(a), 41101(a), (b), and (c), 41102, 41103(b)(2), 41701, 41702, 44505(a)(1)(A) and (B), 44702(f)(4), 44709(a), 44721, 46105(a), and 46106.
- Title 14 CFR Parts 91, 97, 119, 121, 125, 129, and 135.
- FAA Order 6560.10, Runway Visual Range (RVR).
B. Forms and Job Aids for Parts 91, 91K, and 125 Operations.

- Figure 4-5, Category II/III Approval Job Aid (Operations) for Parts 91, 91K, and 125; and
- Figure 4-6, Category II/III Approval Job Aid (Avionics/Maintenance) for Parts 91, 91K, and 125.

NOTE: Figure 4-5 is a blank CAT II/III Operations job aid, and Figure 4-6 is a blank CAT II/III Airworthiness job aid. A partial example of a completed CAT II/III Operations job aid is included in Figure 4-7, Example of Completed Flight Operations Job Aid for Parts 91, 91K, and 125. For the most recent version of both the Operations and Airworthiness job aids, see the Flight Operations Branch (AFS-410) Web site at http://www.faa.gov/about/office_org/headquarters_offices/avs/offices/afs/afs400/afs410/policy_guidance/.

C. For Parts 121 and 135 Operations. Utilize SAS DCTs 2.2.2 (OP), Category II & III Operations, and 2.3.1(OP), Appropriate Operation Equipment.

4-192 DEFINITIONS.

A. CAT II Runway Visual Range (RVR) 1000. Order 8400.13 authorizes CAT II approaches with a DH as low as 100 feet and visibility minimums of RVR 1000 to runways that meet all CAT II equipment, performance, and lighting requirements. The operator must use either autoland or Head Up Display (HUD) authorized to touchdown.
B. CAT III Operations. CAT III operations are separated into three subcategories: CAT IIIa, CAT IIIb, and CAT IIIc.

1) Category IIIa Operations. CAT IIIa is an approach and landing operation with an RVR of not less than 700 feet (200 meters) without a DH, or with a DH of less than 100 feet (30 meters), or an alert height (AH) that is typically between 50 and 200 feet, depending on aircraft certification and operator preferences. Both fail passive (FP) and fail operational (FO) airborne equipment can be used in CAT IIIa operations.

2) Category IIIb Operations. CAT IIIb is an approach and landing operation with an RVR of less than 700 feet (200 meters), but not less than 150 feet (50 meters), and a DH of 50 feet (15 meters) or less, or an AH that is typically between 50 and 200 feet, depending on aircraft certification and operator preferences. Both FP and FO airborne equipment can be used for CAT IIIb operations.

3) Category IIIc Operations. CAT IIIc is an approach and operation landing without a DH and without RVR limitations (zero-zero). CAT IIIc operations are currently not authorized.

C. SA CAT I. Order 8400.13 authorizes SA CAT I approaches to a radio altimeter (RA) DH as low as 150 feet and a visibility minimum as low as RVR 1400 to runways that do not have touchdown zone (TDZ) or runway centerline (RCL) lighting when the approach is flown using an aircraft with a HUD to DH.

NOTE: To be approved for SA CAT I, each airplane and HUD must be authorized and maintained for CAT II or CAT III operations.

D. SA CAT II. FAA Order 8400.13 authorizes CAT II approaches with a DH as low as 100 feet and visibility minimums of RVR 1200 at runways that do not meet all of the lighting requirements (Approach Lighting System With Sequenced Flashing Lights (ALSF)-2, TDZ, RCL lights) for standard CAT II. The operator must use either autoland or HUD authorized to touchdown.

E. Standard CAT II Operations. CAT II operations are approach and landing operations conducted with a DH of less than 200 feet (60 meters), but not less than 100 feet, (30 meters), and an RVR of not less than 1200 feet (350 meters).

NOTE: For rotorcraft, CAT II authorization in accordance with this section also permits Copter ILS operations to a DH of less than 200 feet.

4-193 OPERATOR AUTHORIZATION—SA CAT I, SA CAT II, CAT II RVR 1000.

A. Inspector Procedures. The purpose of this task is for the POI to authorize issuance of the appropriate OpSpec/MSpec/LOA (or a letter disapproving the request for the OpSpec) for operators to conduct ILS SA CAT I, SA CAT II, and CAT II RVR 1000 operations.

B. SA CAT I. To conduct SA CAT I operations, the operator must be authorized for either CAT II or III operations using an approved CAT II or III HUD to DH. The SA CAT I
authorization is contained in selectable text in OpSpec/MSpec/LOA C052 for parts 91K, 121, 125, 129, and 135 operators, and in OpSpec/MSpec/LOA C059 for part 91 operators. Guidance on authorizing C052 and C059 is contained in Volume 3, Chapter 18, Section 5, and in Volume 12, Chapter 2, Section 5 for part 129.

1) If the operator is not approved for CAT II or III operations using an approved CAT II or III HUD, then the operator must first complete the CAT II/III approval process, which begins in paragraph 4-194, CAT II/III ILS Operator Authorization Process. The operator is eligible for SA CAT I when RVR 1200 minimums using an approved HUD to DH or touchdown are authorized through the CAT II/III approval process.

2) If the operator is already approved for CAT II or III operations using an approved CAT II or III HUD, completion of the CAT II/III approval process is not required for SA CAT I.

C. **SA CAT II.** To conduct SA CAT II operations, the operator must be authorized for either CAT II or III operations using autoland or an approved HUD that provides guidance to touchdown. SA CAT II authorization is contained in selectable text in OpSpec/MSpec/LOA C059 for parts 91, 91K, 121, 125, 129, and 135 operators. Guidance on authorizing C059 is contained in Volume 3, Chapter 18, Section 5, and in Volume 12, Chapter 2, Section 5 for part 129.

1) If the operator is not approved for CAT II or III operations using autoland or an approved HUD that provides guidance to touchdown, then the operator must first complete the CAT II/III approval process, which begins in paragraph 4-194, CAT II/III ILS Operator Authorization Process. The operator is eligible for SA CAT II when RVR 1200 minimums using autoland or an approved HUD that provides guidance to touchdown are authorized through the CAT II/III approval process.

2) If the operator is approved for CAT II or III operations using autoland or an approved HUD that provides guidance to touchdown, completion of the CAT II/III approval process is not required for SA CAT II.

D. **CAT II—RVR 1000.** To conduct CAT II RVR 1000 operations, the operator must be authorized for either CAT II or III operations using autoland or an approved HUD that provides guidance to touchdown. CAT II RVR 1000 authorization is contained in selectable text in OpSpec/MSpec/LOA C059 for parts 91, 91K, 121, 125, 129, and 135 operators. Guidance on authorizing C059 is contained in Volume 3, Chapter 18, Section 5, and in Volume 12, Chapter 2, Section 5 for part 129.

1) If the operator is not approved for CAT II or III operations using autoland or an approved HUD that provides guidance to touchdown, then the operator must first complete the CAT II/III approval process, which begins in paragraph 4-194, CAT II/III ILS Operator Authorization Process. The operator is eligible for CAT II RVR 1000 when RVR 1200 minimums using autoland or an approved HUD that provides guidance to touchdown are authorized through the CAT II/III approval process.
2) If the operator is approved for CAT II or III operations using autoland or an approved HUD that provides guidance to touchdown, completion of the CAT II/III approval process is not required for CAT II RVR 1000.

4-194 CAT II/III ILS OPERATOR AUTHORIZATION PROCESS.

A. Inspector Procedures. The purpose of this task is for the POI to authorize issuance of the appropriate OpSpec/MSpec/LOA (or a letter disapproving the application for the OpSpec) for operators to conduct CAT II and/or CAT III operations (after concurrence from the RFSD).

1) The principal POCs for the operator are the POI, PMI, and PAI. Any errors or corrections discovered during the evaluation (by the AWOS, for example) must be channeled through those PIs back to the applicant. This process will ensure consistency and continuity.

2) This task requires timely issuance of a CAT II/III OpSpec/MSpec/LOA, as applicable, or disapproval of the operator’s application.

NOTE: For rotorcraft, CAT II authorization in accordance with this section also permits Copter ILS operations to a DH of less than 200 feet.

B. Five-Phase Process. The CAT II/III operator authorization process consists of five distinct phases and is initiated by an operator’s initial inquiry. Figure 4-4 shows a flow chart with a summary of the five-phase process.

C. Initial Inquiry (Phase One).

1) Upon initial inquiry, determine the type of operation proposed by the applicant in accordance with Figure 4-4.

2) See paragraph 4-193, Operator Authorization—SA CAT I, SA CAT II, CAT II RVR 1000, and Table 4-5, Special Authorization Category I, Special Authorization Category II, and Category II RVR 1000 Authorization, if the operator wants to add SA CAT I, SA CAT II, and/or CAT II RVR 1000 authorizations as part of the CAT II/III approval process.

3) Advise the applicant to submit a Letter of Intent (LOI) (see Figure 4-8, Sample Letter of Intent to Conduct Category II or III Operations). The LOI should be submitted before the formal application so that the FAA can dedicate appropriate resources for the evaluation of the application. Once the LOI is received, the POI should notify the RNGB (AXX-220), which will assign an AWOS.

4) Inform the applicant that AC 120-29 (for CAT II applicants) and AC 120-28 (for CAT III applicants) are available at http://rgl.faa.gov.

5) Advise the applicant that there is only one acceptable means for demonstrating that the airborne equipment is Airworthy for CAT II or III operations. This means of approval is CAT II or III type design approval, which is normally reflected in the FAA-approved Aircraft Flight Manual (AFM). Inspectors shall not approve CAT II or III operations with any aircraft for any operator unless the operator presents written evidence of CAT II or III type design approval.
for the particular aircraft. Operators seeking CAT II or III type design approval should contact any Aircraft Certification Office (ACO) (see Figure 4-9, Sample Letter from the Operator to the Aircraft Certification Office). The ACO will then forward the request to the appropriate certification directorate for prioritization. If necessary, the certification directorate or the Aircraft Evaluation Group (AEG) will stipulate operational limitations associated with their determination.

6) A list of ACOs may be found at http://www.faa.gov/about/office_org/field_offices/aco/.

7) Inform the applicant that a copy of the latest versions of CAT II/III job aids and other useful information can be found on the AFS-410 Web site at http://www.FAA.gov/about/office_org/headquarters_offices/avs/offices/afs/afs400/afs410/policy_guidance/. Explain the job aid to the applicant with particular emphasis on what the contents of the application include, what a compliance statement consists of (see subparagraph D3)), and what the Operator Use Suitability Demonstration (OUSD) entails (see subparagraph F2)). Advise the applicant that the application package should be distinctly divided into an Airworthiness section and an Operations section for evaluation purposes.

8) Advise the applicant of the importance of committing resources in developing the application package and that, even if a perfect package is submitted, the minimum timeline requirement (after package approval) will be in accordance with Table 4-5A, Summary of Category II/III Approval Requirements, which includes the relevant timeframes for each required OUSD stage, based on the operator’s experience and the level of authorization sought.

NOTE: The timeline may be significantly compressed for operators with CAT II/III authorization in the same model but different series of aircraft with minimal differences between flight guidance systems, landing systems, and avionics systems.

9) Advise the applicant to name the company’s central POC, and provide telephone and fax contact numbers as early as possible.

10) Review with the applicant the requirements for preparing a compliance statement, as identified in subparagraph D3).

11) Make appropriate PTRS entries. Note the date that the LOI (if applicable) was sent for review.

D. Receipt of Application (Phase Two).

1) Upon receipt of the formal application and compliance statement, the first task is to inventory the contents of the package by referencing the respective Operations and Airworthiness job aids sections titled “Operator’s Document Application Package.” If any of the documentation is missing or appears incomplete, the evaluation process may begin on the remaining documents.
2) Timely notification to the operator on the documents that are missing or that are incomplete should be made as soon as practical.

3) A compliance statement shall be prepared by every operator, regardless of previous experience, when introducing low visibility operations with a new make, model, and series (M/M/S) to their fleet. A compliance statement is not required when an operator is authorized CAT II/III in the same model but different series of aircraft with minimal differences between flight guidance systems, landing systems, and avionics systems. In these situations, the operator should complete the job aid to facilitate the PI’s review.

   a) Preparation of the compliance statement benefits the applicant by systematically ensuring that all applicable areas are appropriately addressed during the evaluation process. The compliance statement shall be in the form of a complete listing of all AC (AC 120-29 and/or AC 120-28) sections.

   b) Next to each listing, the applicant must provide a specific reference to a manual or other document in the application package and may provide a brief narrative description that describes how the applicant will comply with each section. Those sections that do not apply to the type of operation being requested should be annotated in the compliance statement as “N/A.” The compliance statement also serves as a master index to the applicant’s manual system to expedite the FAA’s review and approval of the operation and manual system. The compliance statement is an important source document during the evaluation process.

   c) After the evaluation process is completed, the compliance statement should be kept current as changes are incorporated in the applicant’s system. Compliance statements should be prepared as a two-volume application. Volume I should contain the AC reference by section (e.g., AC 120-29, paragraph 6.1.8) and provide the location in the operator’s source document (e.g., AFM, section 2.4, page 36). Volume II should contain all the relevant operator documents pertaining to the operator’s application package.

   d) Examples of the compliance statement format are provided in Figure 4-10, Compliance Statement Examples.

E. Evaluating the Formal Application Package (Phase Three).

1) Begin the evaluation of the applicant’s package by entering the operator’s name and applicable 14 CFR type of operation on the job aid.

2) Then, following the job aid line by line, enter the appropriate page or section from the operator’s documents into the “Operator’s Reference Document” column. Note that the job aid has linked references to ACs, regulations, and orders that will provide additional guidance during the conduct of the evaluation. Figure 4-7 is a representative section of the Flight Operations Job Aid illustrating how entries are made by the reviewing inspector.

3) While the job aids provide a systematic, standardized approach to conducting the evaluation, they do not provide sufficient depth and scope to capture areas that are identified as needing additional work. These areas may be complex and need further clarification or may be as simple as typographical errors that require correction.
4) The inspector should initiate and maintain a separate comment document list of findings while conducting the evaluation. Figure 4-11, Comment Document List: Example, is an example of what such a list may look like and illustrates the depth and scope of what the evaluation should include.

5) During the evaluation, if any documents or other relevant parts of the application require correction, are missing, or are incomplete, the applicant should be notified immediately. Normally, documents should not be returned to the applicant unless so requested. This facilitates the ability to compare newly revised material with its earlier version. A log should be kept by the reviewing inspector to maintain a historical record of telephone conversations, emails, or other forms of correspondence that occur during the evaluation period. However, if the majority of the application package is deemed to be unacceptable to the inspector, it should be returned with a letter of disapproval (see Figure 4-12, Sample Letter of Disapproval of a Special Authorization Category I or Category II/III Application).

6) The operator’s approved training and qualification program (CAT II/III pilot training program) must provide the flightcrews with the CAT II/III skills, knowledge, proficiency, and qualification necessary to safely conduct CAT II/III operations. The use of the stabilized approach concept is mandatory for all CAT II/III operations. It is national policy and direction that all operators should be encouraged to use the Standard Instrument Approach Procedures (SIAP) for all CAT II/III operations. The training and qualification curriculum changes necessary for CAT II/III operations are directly related to the need for increased precision in flightpath control due to the reduced seeing-conditions encountered in these operations.

   a) The CAT II/III ground training curriculum segments must include the following:

   • Required ground-based visual aids,
   • Required ground-based electronic aids,
   • Required airborne equipment,
   • Authorized minimums,
   • Controlling RVR requirements,
   • Limitations and use of RVR information,
   • CAT III critical areas and the critical need to protect these areas,
   • Required crew duties and responsibilities,
   • Seeing conditions associated with the transition from instrument to visual flight,
   • Essential nature of maintaining a full-time instrument reference by one pilot throughout the approach and landing,
   • Critical nature of proper eye reference position (proper sitting height),
   • Required pilot training and qualifications,
   • Methods for determining that the aircraft is Airworthy for CAT II/III operations, and
   • Dispatch/flight release requirements.
b) The flight training requirements depend on the equipment installed (autopilot, autoland, or HUD), the operating procedures used, and the kinds of CAT II/III operations authorized (such as FP or FO). The primary objective of the flight training is to ensure that the flightcrew has the skills, knowledge, proficiency, and qualifications necessary to meet the operational concepts and criteria for CAT II/III operations. The flightcrews must also be able to demonstrate in flight, or through an acceptable simulation, the competence necessary to safely conduct these operations. To satisfactorily demonstrate competence, the pilot must successfully accomplish the required maneuvers in accordance with the policies, criteria, procedures, and crew duties specified in this order, AC 120-28, AC 120-29, and the specific operator’s operating manuals and approved qualification program. The CAT II/III flight training curriculum segment must include sufficient flight training to permit pilots to acquire the knowledge and develop the skills and abilities necessary to demonstrate competence in the following areas (refer to AC 120-28 and AC 120-29 for additional guidance):

- Determination of DH and/or AH, including the use of RAs and, if appropriate, the inner markers;
- Recognition of, and proper reaction to, significant CAT II/III system failures before passing the DH or AH, as appropriate;
- Proper missed approach techniques and the expected height loss as it relates to manual or automatic go-around and the go-around initiation altitude;
- The use and limitations of RVR information, including determination of controlling RVR and the number and locations of the RVR reporting systems required;
- The availability and limitations of external visual cues during the latter stages of the approach, flare, and landing;
- Proper procedures to be used for unexpected visibility deterioration (to less than the authorized RVR) during approach, flare, and rollout;
- Achieving the proper eye reference position (proper sitting height) and the expected external visual references with the weather at authorized minimums;
- The appearance and expected sequence of visual cues during approaches and landings at the authorized minimums;
- The effects of wind shear (in CAT II/III weather conditions) on system performance, the proper procedures to be used in these wind shear encounters, and the wind limitations for these operations;
- The proper procedures for transitioning from instrument to visual flight;
- Recognition of the limits of acceptable aircraft position and flightpath tracking in the approach, flare, and landing with special emphasis on tracking performance in the decision region; and
- Recognition of, and reaction to, significant airborne or ground system faults or abnormalities during the approach, flare, and landing.

c) Each pilot in command (PIC) and second in command (SIC) used in CAT II/III operations must satisfactorily demonstrate the ability to safely conduct CAT II/III operations to either a company check pilot or an FAA inspector during initial and recurrent
CAT II/III qualification. The events and/or maneuvers that must be demonstrated depend on the airborne equipment installed, the kinds of CAT II/III operations authorized, and the crew duties and responsibilities used by that operator. Refer to AC 120-28 and AC 120-29 for a more detailed description of these requirements.

7) The operator’s manuals must contain clear and concise policy, criteria, guidance, and direction to its flightcrews and other persons involved in its CAT II/III operations. To be acceptable, these manuals must meet the criteria of 14 CFR, this order, and the appropriate CAT II/III ACs. These manuals must adequately address the following:

- Airport and runway requirements, including the additional runway field length required;
- Airborne and ground-based equipment required for the various minimums;
- Methods for determining that the aircraft is Airworthy for the intended operation, including minimum equipment list (MEL)/Configuration Deviation List (CDL) requirements;
- Flightcrew procedures, crew duties, and crew responsibilities;
- Instrument approach procedures (IAP) and minimums authorized;
- Pilot training and qualifications; and
- Any operating restrictions or limitations necessary to safely conduct these operations.

8) Before approving the operator’s proposal, the inspector must ensure that the operator’s CAT II/III Continuous Airworthiness Program (CAP) includes the special airborne equipment and procedures required for CAT II/III operations. Coordination with the PMI and the PAI is essential before granting operational approval. The inspector shall not issue OpSpecs that authorize CAT II/III operations until all requirements are met. This includes approval of the operator’s CAT II/III maintenance program for the particular aircraft involved.

9) When the application package is deemed to be acceptable to the inspector, with the concurrence of the AWOS, a letter of approval should be sent to the operator. Figure 4-13, Sample Memo of Approval of a Category II/III Application Package, contains an example of a letter of approval.

F. The Demonstration Phase (Phase Four). Phase Four is referred to as the OUSD. This phase begins after the POI has received concurrence from the AWOS that the operator’s application package is in order and has been approved. The OUSD plan submitted with the application is the primary vehicle used for conducting this phase. Guidance for the OUSD and an example of an acceptable OUSD plan are contained in this section.

1) Special Considerations. Special design requirements and special maintenance programs are necessary to achieve the airborne system reliability required for the conduct of CAT II/III operations. The special maintenance programs necessary for CAT II/III operations are extensive and expensive and are usually the largest factors affecting an operator’s decision of whether or not to conduct these operations.
2) Purpose. The purpose of the OUSD is to demonstrate and validate the reliability and performance of lower minimum programs (LMP) in line operations consistent with the operational concepts specified in AC 120-28 and AC 120-29, as applicable. An OUSD is required for CAT II and III approvals. Demonstration requirements are established considering any applicable FAA Flight Standardization Board (FSB) criteria, applicability of previous operator service experience, experience with a specific aircraft type by other operators, experience of crews of that operator, and other such factors. The demonstration period is typically 6 months long for each phase (CAT II and III) of a progression to CAT III landing minimums. This permits the FAA to evaluate the ability of the operator to maintain and operate its proposed LMP system. During the demonstration period, at least 10 percent of the required number of landings should be observed by an appropriately qualified FAA Operations inspector. For this purpose, an appropriately qualified operations inspector is:

- For small piston and turboprop airplanes, or helicopters, qualified in the appropriate category and class;
- For large helicopters, qualified in a helicopter over 12,500 pounds;
- For large piston or turboprop airplanes, qualified in an airplane over 12,500 pounds;
- For small turbojets, qualified in the appropriate category and class; and
- For large turbojets, qualified in a turbojet airplane over 12,500 pounds.

3) Subphases. The OUSD phase consists of two subphases:

a) The first subphase is referred to as the OUSD landing phase. During this period, the operator conducts the required number of landings using the CAT II or III systems approved in the submitted OUSD plan. The weather minimums used by the operator is prescribed based on the operator’s current authorization for that aircraft. A success rate of 90 percent is required.

I. Parts 121, 125, and 135 operators seeking CAT III approval, or seeking to conduct CAT II using autoland or HUD to touchdown, must be issued OpSpec/MSpec C061 (autoland) or OpSpec/MSpec C062 (HUD to touchdown) prior to the landing demonstrations. Part 121, § 121.579(c), part 125, § 125.329(d), and part 135, § 135.93(d) specify that these types of operations must be authorized by OpSpecs.

2. Demonstrations may be conducted in line operations, during training flights, or during aircraft type or route proving runs. The demonstration period should run for 6 months. Therefore, if an operator seeks CAT II initially and then CAT III subsequently, the total demonstration period will be 12 months.

3. The POI issues the appropriate OpSpec/MSpec/LOA (OpSpec/MSpec/LOA C059 or C060 (H108 or H109 for helicopter operations), as applicable) with any appropriate restricted lower minimums and any other restrictions required for the OUSD demonstration phase. If an excessive number of failures (e.g., unsatisfactory landings or system disconnects) occur during the landing demonstration program, a determination should be made for the need for additional demonstration landings, or for consideration of other remedial action (e.g., procedures adjustment, wind constraints, or system modifications).
b) The second phase, the OUSD demonstration phase, begins after completion of the OUSD landing phase. The OUSD demonstration phase is typically 6 months, unless otherwise indicated in Table 4-5A and subparagraph F4)d). The purpose of the OUSD demonstration phase is to verify that the operator’s proposed maintenance and operational procedures are suitable for CAT II/III operations. To reach the lowest CAT III minimums, a second OUSD demonstration phase may be required, as specified in Table 4-5A and subparagraph F4)d). After successful completion of all required OUSD demonstration subphases, unrestricted minimums are issued by the POI with concurrence from the regional AWOS.

4) OUSD Landing and Minimums Requirements.

a) CAT III Authorization Basis.

1. AC 120-28C Authorized Aircraft. Aircraft authorized under AC 120-28C and earlier typically contain a statement authorizing CAT IIIa or CAT IIIb automatic approach and landing operations.

   a. Aircraft authorized for CAT IIIa FO or FP operations are currently limited to RVR 700 landing minimums by regulation. CAT IIIa may be authorized minimums as low as RVR 700 for TDZ, RVR 700 for Mid Runway Rollout (MID) RVR, and RVR 300 for rollout RVR after successful completion of the first 6-month OUSD.

   b. Aircraft authorized for CAT IIIb with a rollout control system that meets the criteria in AC 120-28C, Appendix 2 (FP rollout system) may be authorized minimums as low as RVR 600 for TDZ, RVR 600 for MID, and RVR 300 for rollout after successful completion of the first 6-month OUSD. The operator may then be authorized for minimums as low as RVR 400 for TDZ, RVR 400 for MID, and RVR 300 for rollout RVR after successful completion of the second 6-month OUSD.

   c. Aircraft authorized for CAT IIIb with a rollout control system that meets the criteria in AC 120-28C, Appendix 3 (FO rollout system) may be authorized minimums as low as RVR 600 for TDZ, RVR 400 for MID, and RVR 300 for rollout after successful completion of the first 6-month OUSD. The operator may then be authorized for minimums as low as RVR 300 for TDZ, RVR 300 for MID, and RVR 300 for rollout RVR after successful completion of the second 6-month OUSD.

2. AC 120-28D Authorized Aircraft. Aircraft authorized under AC 120-28D contain a statement authorizing FP or FO landing and/or rollout control systems.

   a. FP Landing System without Rollout System. Aircraft with an FP landing system without a rollout system may be authorized minimums as low as RVR 600 for TDZ, RVR 600 for MID, and RVR 300 for rollout after successful completion of the first 6-month OUSD.

   b. FP Landing System with Any Rollout System. Aircraft with an FP landing and any rollout system may be authorized minimums as low as RVR 600 for TDZ, RVR 400 for MID, and RVR 300 for rollout after successful completion of the first 6-month OUSD.
c. FO Landing System with an FP Rollout System. Aircraft with an FO landing system and FP rollout systems may be authorized minimums as low as RVR 600 for TDZ, RVR 400 for MID, and RVR 300 for rollout after successful completion of the first 6-month OUSD. The operator may then be authorized for minimums as low as RVR 400 for TDZ, RVR 400 for MID, and RVR 300 for rollout RVR after successful completion of the second 6-month OUSD.

d. FO Landing System with an FO Rollout System. Aircraft with FO landing and rollout systems may be authorized minimums as low as RVR 600 for TDZ, RVR 400 for MID, and RVR 300 for rollout after successful completion of the first 6-month OUSD. The operator may then be authorized for minimums as low as RVR 400 for TDZ, RVR 300 for MID, and RVR 300 for rollout RVR after successful completion of the second 6-month OUSD.

b) CAT II/III Experienced Operators. To meet the definition of “CAT II experienced” as used in this section, the operator must have a current OpSpec/MSpec/LOA C059 (H108 for helicopter operations) that has been authorized for at least 1 year for unrestricted CAT II operations to an RVR 1200 minimum. To meet the definition of “CAT III experienced” as used in this section, the operator must have a current OpSpec/MSpec/LOA C060 (H109 for helicopter operations) that has been authorized for at least 1 year for CAT III operations to no more than an RVR 700 minimum. Operators that have foreign authority approval from an International Civil Aviation Organization (ICAO) Member State authorizing use of lowest applicable or intended CAT II or III minimums are also considered experienced operators.

1. Experienced CAT III operators seeking a lower CAT III authorization, such as an approved RVR 600 CAT III operator seeking an RVR 300 CAT III authorization, are not required to complete an additional OUSD.

2. The inspector should ensure that the aircraft are suitable for the authorization sought, and review the operator’s training, maintenance, and operational procedures to ensure that each reflect the new authorization.

c) Summary of OUSD Landing and Demonstration Phase Requirements. Table 4-5A contains a summary of OUSD landing and demonstration phase requirements for multiple scenarios. These scenarios are described further in subparagraphs F4(d)–h).

d) Operator with No CAT II/III Experience Seeking CAT II. For a new operator (defined as one without prior CAT II/III experience) seeking CAT II for the first time, the aircraft is considered to be “new” regardless of how long the aircraft has been in the operator’s fleet. The operator must conduct 100 landings at CAT I weather minimums or greater. Upon successful completion of 90 percent of the landings, the POI may issue OpSpec/MSpec/LOA C059 (H108 for helicopter operations) authorizing CAT II operations to RVR 1600 for the duration of the 6-month maintenance OUSD. Upon successful completion of the OUSD, the POI may authorize CAT II operations to RVR 1200.
1. In standard CAT II operations, the objective of the requirement for an operator to validate the CAT II maintenance program for at least 6 months with minimums restricted to DH 100 and RVR 1600 is to ensure that the required level of airborne equipment reliability is achieved. This is to ensure that frequent malfunctions will not occur in standard CAT II operations (DH 100 and RVR 1200). The design features of CAT III airborne equipment significantly reduce the potential for failures that could adversely affect standard CAT II operations. As a result, validation of the CAT II maintenance program before conducting operations to DH 100/RVR 1200 is not necessary if these operations are conducted under a restriction that requires the airborne equipment to operate to CAT III standards (e.g., FP or FO automatic landing).

2. If the operator requests to eliminate the 6-month restriction (DH 100 and RVR 1600) based on operational credit for the use of CAT III systems to conduct CAT II operations, the operator’s OpSpec/MSpec/LOA C059 (H108 for helicopter operations) must specify that all CAT II operations using DH 100 and RVR 1200 must be conducted with the airborne equipment operating to CAT III standards. This limitation should read FP autoland only, or FP/FO autoland only, as appropriate, for aircraft equipped with CAT III automatic landing systems, or FP HUD only for aircraft equipped with CAT III HUD. For DH 100 and RVR 1200 operations, these restrictions must remain in the operator’s OpSpecs/MSpecs/LOAs until the CAT II maintenance program for that aircraft is successfully validated.

e) Operator with No CAT II/III Experience Seeking CAT III. For a new operator (defined as one without prior CAT II/III experience) seeking CAT III for the first time, the aircraft is considered to be “new” regardless of how long the aircraft has been in the operator’s fleet. The operator must conduct 100 landings at CAT I weather minimums or greater. Upon successful completion of 90 percent of the landings, the POI may issue OpSpec/MSpec/LOA C059 (H108 for helicopter operations) authorizing CAT II operations to RVR 1200 for the first 6-month maintenance OUSD. This RVR 1200 minimum is based on the use of CAT III landing systems (autoland or HUD). Upon successful completion of this OUSD, the POI may issue OpSpec/MSpec/LOA C060 authorizing CAT III operations to RVR 700 or 600 for the duration of the second 6-month maintenance OUSD. If the operator is requesting minimums below RVR 600, a second 6-month OUSD is required. Upon successful completion of the second OUSD, the POI may authorize CAT III operations to RVR 400 or 300.

f) Operator with CAT II Experience Seeking CAT II for a New Aircraft. For an experienced CAT II operator seeking CAT II for a new aircraft (defined as an aircraft new to the operator’s fleet), the operator must conduct 50 landings at CAT I weather minimums or greater. Upon successful completion of 90 percent of the landings, the POI may issue OpSpec/MSpec/LOA C059 authorizing CAT II operations to RVR 1600 for the duration of the 6-month maintenance OUSD. Upon successful completion of the OUSD, the POI may authorize CAT II operations to RVR 1200.

NOTE: An operator may be approved to eliminate the 6-month restriction (DH 100 and RVR 1600) based on operational credit for the use of CAT III systems to conduct CAT II operations, in accordance with subparagraph F4)d)2.
g) Operator with CAT II Experience Seeking CAT II with New Flight Control Equipment. For an experienced CAT II operator seeking CAT II for the same aircraft with new equipment, such as the addition of a CAT II or III HUD, the operator must conduct 25 landings at CAT I weather minimums or greater. The first 3-month maintenance OUSD may run concurrently with the landing phase. Upon successful completion of 90 percent of the landings and the first 3-month maintenance OUSD, the POI may issue OpSpec/MSpec/LOA C059 (H108 for helicopter operations) authorizing CAT II operations to RVR 1600 for the duration of the 3-month maintenance OUSD. Upon successful completion of the second OUSD, the POI may authorize CAT II operations to RVR 1200.

1. Although all demonstration landings using the new flight control equipment must be conducted at CAT I weather minimums or greater, at the POI’s discretion the operator may continue to use CAT II minimums, provided the requirements of the current authorization continue to be met. The operator should submit a plan to state how they will transition to the new equipment and conduct the landing OUSD. This plan should address the differences between CAT II operations using the current authorization, proposed CAT II operations using new equipment, and the plan for conducting the landing OUSD in CAT I or better conditions using the new equipment, and it should address operational control in CAT II conditions, training, procedures, and profiles. With the concurrence of the AWOS, the POI may authorize continued CAT II operations in the transition using the previously authorized equipment if those operations can be conducted safely.

2. If CAT II operations cannot be conducted safely using the current authorization due to differences in crew procedures, training, etc., the operator’s CAT II authorization should be deauthorized until it can be reauthorized after the OUSD landing phase in accordance with subparagraph F4)g).

NOTE: An operator may be approved to eliminate the 6-month restriction (DH 100 and RVR 1600) based on operational credit for the use of CAT III systems to conduct CAT II operations, in accordance with subparagraph F4)d)2.

h) Operator with CAT II Experience Seeking CAT III with New Flight Control Equipment. For an experienced CAT II operator seeking CAT III for the same aircraft with new equipment, the operator must conduct 50 landings at CAT I weather minimums or greater. Upon successful completion of 90 percent of the landings, the POI may issue OpSpec/MSpec/LOA C059 (H108 for helicopter operations) authorizing CAT II operations to RVR 1200 for the first 6-month maintenance OUSD. This RVR 1200 minimum is based on the use of CAT III landing systems (autoland or HUD). Upon successful completion of this OUSD, the POI may issue OpSpec/MSpec/LOA C060 authorizing CAT III operations to RVR 700 or 600 for the duration of the second 6-month maintenance OUSD. If the operator is requesting minimums below RVR 600, a second 6-month OUSD is required. Upon successful completion of the second OUSD, the POI may authorize CAT III operations to RVR 400 or 300.

1. Although all demonstration landings using the new flight control equipment must be conducted at CAT I weather minimums or greater at the POI’s discretion, the operator may continue to use CAT II minimums, provided the requirements of the current authorization continue to be met. The operator should submit a plan to state how they will
transition to the new equipment and conduct the landing OUSD. This plan should address the
differences between CAT II operations using the current authorization, proposed CAT II
operations using new equipment, and the plan for conducting the landing OUSD in CAT I or
better conditions using the new equipment, and it should address operational control in CAT II
conditions, training, procedures, and profiles. With the concurrence of the AWOS, the POI may
authorize continued CAT II operations in the transition using the previously authorized
equipment if those operations can be conducted safely.

2. If CAT II operations cannot be conducted safely using the current
authorization due to differences in crew procedures, training, etc., then the operator’s CAT II
authorization should be deauthorized until it can be reauthorized after the OUSD landing phase
in accordance with subparagraph F4)g).

i) Operator with CAT II Experience Seeking CAT III for the Same Aircraft. For
an experienced CAT II operator seeking CAT III for the same aircraft with the same equipment,
the operator must conduct 50 landings at CAT II weather minimums or greater. Upon successful
completion of 90 percent of the landings, the POI may issue OpSpec/MSpec/LOA C060
authorizing CAT III operations to RVR 700 or 600 for the 6-month maintenance OUSD. This
OUSD is required even if the operator is not seeking minimums below RVR 600. Upon
successful completion of the OUSD, the POI may authorize CAT III operations to RVR 400
or 300.

j) Operator with CAT II Experience Seeking CAT III for a New Aircraft. For an
experienced CAT II operator seeking CAT III for an aircraft new to the operator’s fleet, the
operator must conduct 50 landings at CAT I weather minimums or greater. With successful
completion of 90 percent of the landings, the POI may issue OpSpec/MSpec/LOA C059
(H108 for helicopter operations) authorizing CAT II operations for the duration of the 6-month
maintenance OUSD. Upon successful completion of this OUSD, the POI may issue
OpSpec/MSpec/LOA C060 authorizing CAT III operations to RVR 700 or 600 for the duration
of the second 6-month maintenance OUSD. If the operator is requesting minimums below
RVR 600, a second 6-month OUSD is required. Upon successful completion of the second
OUSD, the POI may authorize CAT III operations to RVR 400 or 300.

k) Operator with CAT III Experience Seeking CAT II for a New Aircraft. For an
experienced CAT III operator seeking CAT II for an aircraft new to the operator’s fleet, the
operator will conduct 50 landings at CAT I weather minimums or better. Upon successful
completion of 90 percent of the landings, the POI may issue OpSpec/MSpec/LOA C059
(H108 for helicopter operations) to conduct CAT II operations to RVR 1600 for the duration
of the 6-month maintenance OUSD. Upon successful completion of the OUSD, the POI may
authorize CAT II operations to RVR 1200.

NOTE: An operator may be approved to eliminate the 6-month restriction
(DH 100 and RVR 1600) based on operational credit for the use of CAT III
systems to conduct CAT II operations, in accordance with subparagraph F4)d)2.

l) Operator with CAT III Experience Seeking CAT III for a New Aircraft. For an
experienced CAT III operator seeking CAT III for an aircraft new to the operator’s fleet, the
operator must conduct 50 landings at CAT I weather minimums or greater. With successful completion of 90 percent of the landings, the POI may issue OpSpec/MSpec/LOA C059 (H108 for helicopter operations) authorizing CAT II operations to RVR 1200 for the first 6-month maintenance OUSD. Upon successful completion of this OUSD, the POI may issue OpSpec/MSpec/LOA C060 authorizing CAT III operations to RVR 700 or 600 for the duration of the second 6-month maintenance OUSD. If the operator is requesting minimums below RVR 600, a second 6-month OUSD is required. Upon successful completion of the second OUSD, the POI may authorize CAT III operations to RVR 400 or 300.

m) Operator with CAT III Experience Seeking CAT III with New Flight Control Equipment. For an experienced CAT III operator seeking CAT III for the same aircraft with new equipment (previous CAT III with autoland now adding a HUD), the operator must conduct 25 landings at CAT II weather minimums or better. The first 3-month maintenance OUSD may run concurrently with the landing phase. With successful completion of 90 percent of the landings and the 3-month OUSD, the POI may issue OpSpec/MSpec/LOA C060 authorizing CAT III operations to RVR 700 or 600 for the duration of the second 3-month maintenance OUSD. If the operator is requesting minimums below RVR 600, a second 6-month OUSD is required. Upon successful completion of this OUSD, the POI may authorize CAT II operations to RVR 400 or 300.

5) Operators with Small Fleets. The FAA recognizes that it may be impractical to require operators with limited fleet size and limited access to SA CAT I and CAT II/III runways to accumulate 100 demonstration approaches and landings. The number of required landings is dependent on the operator’s prior experience with SA CAT I or CAT II/III, the number of aircraft in the operator’s fleet, and the FAA’s experience in SA CAT I or CAT II/III operations with the operator’s aircraft. The POI, with concurrence from the RNGB, will determine what is manageable for the operator, while still meeting the intent of AC 120-28 and AC 120-29. Past practice has allowed a combination of approach and landings in a level C or better flight simulator and in the actual aircraft.

G. Sample OUSD Plan. Figure 4-14, Sample Operator Use Suitability Demonstration Plan, contains an example of an OUSD plan that is acceptable to the FAA.

H. The Approval Phase (Phase Five). OpSpec/MSpec/LOA authorizations are issued in accordance with the guidance, direction, and procedures found in Volume 3, Chapter 18, Section 5. Part 129 OpSpec guidance is found in Volume 12, Chapter 2, Section 5.

1) Approval of Landing Minimums. When the data from the operational demonstration has been analyzed and found acceptable, an applicant may be authorized the lowest requested minimums consistent with the requirements in subparagraph F4) (phase four).

2) Qualification and Currency—Operational Requirements. The number or percentage of flightcrew members who are current and qualified prior to authorizing the operator for either restricted or unrestricted CAT II or III operations are at the discretion of the POI. Because the OUSD landing phase has no required timeline (just a required number of successful landings), the operator should have an approved plan and policy to ensure that each flightcrew member required for a specific aircraft/flight is current and qualified for CAT II or III operations.
prior to commencing any CAT II or III approach and landing operations, including required OUSD landings and either restricted or unrestricted CAT II/III authorizations. Typically, the operator will receive approval for flightcrew training (procedures, profiles, simulator requirements, etc.) and should begin training their pilots before the required OUSD landing and maintenance phases. This will ensure that a large percentage of pilots are current and qualified for CAT II or III operations upon issuance of unrestricted CAT II/III landing minimums.

3) **OpSpecs/MSpecs/LOAs.**

    a) **Approved Airports and Runways.** All standard CAT II/III operations are restricted to airports and runways that meet the special safety requirements necessary for CAT II/III operations. Within the United States, all approved CAT II/III airport and runway operations are conducted in accordance with approved CAT II/III IAPs published in part 97. U.S. CAT II/III operations shall only be conducted in accordance with an approved part 97 CAT II/III IAP.

    b) **Foreign Airports and Runways.** For operations in foreign countries, AFS-410 maintains a list of approved CAT II/III airports/runways. Each runway must be authorized in the Foreign Airports/Runways table of OpSpec/MSpec/LOA C059 (CAT II) and/or C060 (CAT III), as appropriate. Even though a particular runway is approved for CAT II/III operations, an operator cannot be authorized to conduct CAT II/III operations at that location until that particular CAT II/III operation is authorized in the operator’s OpSpec/MSpec/LOA. This list is available on the AFS-410 public Web site at http://www.faa.gov/about/office_org/headquarters_offices/avs/offices/afs/afs400/afs410/status_lists/.

    c) **Special Terrain Runways.** AFS-410 also maintains a list of special terrain runways that must be authorized in OpSpec/MSpec/LOA C059 and/or C060 to utilize any CAT II/III minimums that require the use of autoland or HUD to touchdown. This AFS-410 list shows all CAT II/III special terrain runways in the United States, as well as all approved aircraft M/M/S for each runway. This list is available on the AFS-410 public Web site at http://www.faa.gov/about/office_org/headquarters_offices/avs/offices/afs/afs400/afs410/status_lists/. See AC 120-28, Appendix 8, for the full criteria for authorizing an operator to utilize CAT II/III minimums at a special terrain runway. A brief summary is presented here for guidance.

    1. **Case I—First of a Type/Model at Any Special Terrain Airport/Runway.** The operator must perform at least four to six successful evaluation landings (in nonrevenue service) in typical atmospheric conditions regarding wind and turbulence, using the applicable operational aircraft configuration, with a representative aircraft from the fleet. If the flight guidance system may be susceptible to an uncertain performance characteristic (e.g., long flare in a tailwind condition or pitch/throttle coupling oscillation during flare), the evaluation should take place when the system may be put to an appropriate test of the applicable crosswind, tailwind, headwind, wind gradient, or other critical condition applicable, consistent with the operator’s proposed conditions or limits and the AFM’s demonstrated conditions or limits. CAT III-qualified FAA personnel should observe the demonstrations and evaluate the data. Upon successful completion of this demonstration, the operator must conduct 15 landings in
CAT I or better conditions in line operations and provide a report of each landing to the RNGB via their POI. Upon successful completion of 15 landings in CAT I in line operations, the POI may authorize the operator for CAT II/III operations to that runway in OpSpec/MSpec/LOA C059 and/or C060.

2. Case II—Subsequent Special Terrain Airport/Runway Authorization for a Particular Type. Case II addresses the “First of a Model” at a particular runway, but at a subsequent “Special Terrain Airport” runway (e.g., after an aircraft type has already been successfully demonstrated at some special terrain airport runway, such as the first ever B767 type autoland or HUD to touchdown use at Pittsburgh International Airport (KPIT) runway 28L, after prior approval at Seattle Tacoma International Airport (KSEA)). Case II requirements are nearly identical to Case I requirements, with some differences in data recording requirements.

3. Case III—Subsequent Operator Use of a Particular Special Terrain Airport/Runway and Type Combination. In Case III, the type/model of aircraft has already been approved at the requested runway (A320 approved at DEN 34R, a new A320 operator seeks 34R approval). Any authorization should be based on 15 or more successful line landings reported by the operator requesting authorization in CAT I or better weather conditions. The experience reported by the operator should include no unsuccessful landing attempts or failures. If problems or failures are reported, then Case II or Case I procedures may be needed to resolve potential unique aircraft configuration effects, procedural effects, maintenance effects, or other effects.

4. Case IV—“Not-For-Credit” Use of Special Terrain Airport/Runway and Type Combinations. Operators may also request “Not-For-Credit” use of special terrain runways, which authorizes use of autoland or HUD to touchdown, but with no landing minimums credit (CAT I autoland or HUD to touchdown only). In this instance, a representative of the certificate-holding district office (CHDO) may evaluate the use during first line operations or specify that an operator representative (e.g., technical pilot, qualified management pilot, or check airman who is experienced with autoland/HUD operation and performance) assess and verify adequate performance. The CHDO should request and review reports from line crews for at least the first five line landings to confirm appropriate performance. If problems occur, processes for Cases I through IV may be needed to resolve problems depending on the severity and cause of problem. A “Not-For-Credit” evaluation may be done in line operation as long as no previous reported problems have been noted with the same or similar aircraft type, and no Notices to Airmen (NOTAM) or other restrictions preclude such operations. If problems have been reported for the same or similar type, treatment as for Case I through III, as applicable above, may be appropriate.
Figure 4-4. Category II/III Evaluation and Approval Process Flow Diagram for Parts 91, 91K, and 125

Operator makes inquiry or request to FAA about Special Authorization (SA) Category (CAT I), CAT II, and/or CAT III authorization

**PHASE ONE**
1. FAA advises operator of requirements
2. Regional All Weather Operations Specialist (AWOS) is advised of operator's intent
3. FAA and operator develop understanding of subject area
4. Phase complete when operator understands the requirements for FAA acceptance

Operator prepares and formally submits a new or revised application

If evaluation is unsatisfactory, return submission to the operator for correction and/or terminate the phase

**PHASE TWO**
1. FAA examines documents for completeness
2. Phase complete when FAA accepts application

Submission not complete or not acceptable

**PHASE THREE**
1. FAA evaluates the application for compliance with regulations and guidance
2. FAA approves necessary training, avionics, manuals, and other programs
3. Phase complete when results of FAA evaluation are satisfactory
4. If appropriate, FAA grants conditional approval

Is a demonstration required?

NO

DO

**PHASE FOUR**
1. FAA plans for the Operator Use Suitability Demonstration (OUSD) when required
2. Operator demonstrates ability
3. Phase complete when FAA accepts the operator's demonstrated ability

**PHASE FIVE**
FAA approves the operator's program by the issuance of Operations Specification (OpsSpec), management specification (MSpec), or Letter of Authorization (LOA) as applicable

New proposal

Do results require another demonstration or a new proposal?
Figure 4-5. Category II/III Approval Job Aid (Operations) for Parts 91, 91K, and 125

<table>
<thead>
<tr>
<th>CAT II/III APPROVAL JOB AID</th>
<th>Operator’s Reference Document</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operator Name:</td>
<td></td>
</tr>
<tr>
<td>14 CFR Part: 91F 91K 125</td>
<td>Date:</td>
</tr>
<tr>
<td>Application for: CAT II CAT III Authorization</td>
<td></td>
</tr>
<tr>
<td>Previous CAT II: Yes No CAT III: Yes No</td>
<td></td>
</tr>
<tr>
<td>New Aircraft to Operator: Yes No</td>
<td></td>
</tr>
<tr>
<td>Upgraded Equipment on Existing Aircraft: Yes No</td>
<td></td>
</tr>
</tbody>
</table>

**FLIGHT OPERATIONS**

1 OPERATOR PROCEDURES

1.A Type of Operation

1.B CAT II and CAT III Instrument Approach Procedures (IAP)


1.D Crew Coordination and Monitoring Procedures

1.E Callouts

1.F Use of Decision Altitude (DA) (H) (Fail Passive (FP))

1.G Use of Alert Height (AH) (Fail Operational (FO))

1.H Crew Briefings

1.I Configurations

1.J Non-Normal Operations and Procedures

1.K Special Environmental Considerations (as applicable)

1.L Continuing CAT II/III Approaches in Deteriorating Weather

1.M Dispatch Planning and Minimum Equipment List (MEL)/Configuration Deviation List (CDL) Requirements

1.N Aircraft System Suitability Demonstration (as required)

1.O Operator Use Suitability Demonstration (OUSD)

1.P Data Collection/Analysis for Airborne System Demonstrations

1.Q Operational Procedure for Return to Service

2 TRAINING AND CREW QUALIFICATION

2.A Initial Training

2.B Recurrent Training/Qualification
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2.C</td>
<td>Upgrade Training</td>
</tr>
<tr>
<td>2.D</td>
<td>Requalification Training</td>
</tr>
<tr>
<td>2.E</td>
<td>Recency of Experience</td>
</tr>
<tr>
<td>2.F</td>
<td>Differences Training</td>
</tr>
<tr>
<td>2.G</td>
<td>Simultaneous Training and Qualification for CAT II and III</td>
</tr>
<tr>
<td>2.H</td>
<td>Ground Training Curriculum Segment</td>
</tr>
<tr>
<td>2.I</td>
<td>Surface Movement Guidance and Control System (SMGCS) Training</td>
</tr>
<tr>
<td>2.J</td>
<td>Flight Training Curriculum Segment</td>
</tr>
<tr>
<td>2.K</td>
<td>Maneuvers and Procedures Document</td>
</tr>
<tr>
<td>2.L</td>
<td>Initial Qualification</td>
</tr>
<tr>
<td>2.M</td>
<td>Multiple Aircraft Type or Variant Qualification (as applicable)</td>
</tr>
<tr>
<td>2.N</td>
<td>Special Terrain Airports (as applicable)</td>
</tr>
<tr>
<td>2.O</td>
<td>High Minimums Captain Procedures</td>
</tr>
<tr>
<td>2.P</td>
<td>Line Checks</td>
</tr>
<tr>
<td>2.Q</td>
<td>Crew Records and Notification System</td>
</tr>
<tr>
<td>2.R</td>
<td>Advanced Qualification Program (AQP) and Single-Visit Training (SVT) Program Exemptions</td>
</tr>
</tbody>
</table>

### 3 AIRPLANE AND EQUIPMENT

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3.A</td>
<td>Airborne Systems for CAT II</td>
</tr>
<tr>
<td>3.B</td>
<td>Airborne Systems for CAT III</td>
</tr>
<tr>
<td>3.C</td>
<td>Automatic Flight Control System (AFCS) and Landing Systems</td>
</tr>
<tr>
<td>3.D</td>
<td>Flight Director (FD) Systems</td>
</tr>
<tr>
<td>3.E</td>
<td>Head Up Display (HUD) Systems</td>
</tr>
<tr>
<td>3.F</td>
<td>Enhanced/Synthetic Vision Systems (EVS/SVS)</td>
</tr>
<tr>
<td>3.G</td>
<td>Hybrid Displays</td>
</tr>
<tr>
<td>3.H</td>
<td>Required Navigation Performance (RNP) (as required)</td>
</tr>
</tbody>
</table>

### 4 OPERATIONS SPECIFICATIONS

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4.B</td>
<td>OpSpec/MSpec/LOA Amendments (as required)</td>
</tr>
</tbody>
</table>

### 5 OPERATOR’S DOCUMENT APPLICATION PACKAGE

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>5.A</td>
<td>Aircraft Operations Manual (pertinent parts)</td>
</tr>
<tr>
<td>5.B</td>
<td>Flight Operations Manual (FOM) (pertinent parts)</td>
</tr>
<tr>
<td>5.C</td>
<td>Compliance Documents</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>5.E</td>
<td>Requested OpSpec/MSpec/LOA</td>
</tr>
<tr>
<td>5.F</td>
<td>Implementation Timetable</td>
</tr>
<tr>
<td>5.G</td>
<td>Minimum Equipment List (MEL)</td>
</tr>
<tr>
<td>5.H</td>
<td>OUSD Plan</td>
</tr>
<tr>
<td>5.I</td>
<td>Application Letter</td>
</tr>
</tbody>
</table>

**Figure 4-6. Category II/III Approval Job Aid (Avionics/Maintenance) for Parts 91, 91K, and 125**

<table>
<thead>
<tr>
<th>CAT II/III APPROVAL JOB AID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operator Name:</td>
</tr>
<tr>
<td>14 CFR Part: 91F 91K 125</td>
</tr>
<tr>
<td>Date:</td>
</tr>
<tr>
<td>Application for: CAT II CAT III Authorization</td>
</tr>
<tr>
<td>Previous CAT II: Yes No CAT III: Yes No</td>
</tr>
<tr>
<td>New Aircraft to Operator: Yes No</td>
</tr>
<tr>
<td>Upgraded Equipment on Existing Aircraft: Yes No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Doc Ref</th>
<th>AVIONICS/AIRWORTHINESS</th>
<th>Operator’s Reference Document</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>OPERATOR CAMP</td>
<td></td>
</tr>
<tr>
<td>1.A</td>
<td>Type of Operation:</td>
<td></td>
</tr>
<tr>
<td>1.B</td>
<td>Integrated Program Specific Program</td>
<td></td>
</tr>
<tr>
<td>1.C</td>
<td>Lower Landing Minimums (LLM) Specific Procedures in General Maintenance Manual (GMM)</td>
<td></td>
</tr>
<tr>
<td>1.D</td>
<td>Revision and Update LLM GMM Procedures</td>
<td></td>
</tr>
<tr>
<td>1.E</td>
<td>LLM Personnel Records System</td>
<td></td>
</tr>
<tr>
<td>1.F</td>
<td>LLM System and Configuration Status/Compliance for Each Aircraft</td>
<td></td>
</tr>
<tr>
<td>1.G</td>
<td>LLM Mods, Additions, and Changes</td>
<td></td>
</tr>
<tr>
<td>1.H</td>
<td>Mx Requirements/Log Entries Necessary to Change LLM Status</td>
<td></td>
</tr>
<tr>
<td>1.I</td>
<td>Specific LLM Discrepancy Reporting Procedures Minimum Equipment List (MEL)</td>
<td></td>
</tr>
<tr>
<td>1.J</td>
<td>LLM Quality Control (QC) and Quality Analysis (QA) Program</td>
<td></td>
</tr>
<tr>
<td>1.K</td>
<td>Procedures to Ensure Non-LLM Qual Aircraft Remain Off Status</td>
<td></td>
</tr>
<tr>
<td>1.L</td>
<td>Placarding/Logbook Procedures</td>
<td></td>
</tr>
<tr>
<td>1.M</td>
<td>LLM Downgrade Procedures if Mx Performed by Unqualified Personnel</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Return to Service Procedures</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>--------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>1.O</td>
<td>LLM Continued Status Procedures</td>
<td></td>
</tr>
<tr>
<td>1.P</td>
<td>Periodic Performance Sampling Procedures</td>
<td></td>
</tr>
<tr>
<td>1.Q</td>
<td>LLM Parts Identification Procedures</td>
<td></td>
</tr>
<tr>
<td>1.R</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.S</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.T</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.U</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.W</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. INITIAL AND RECURRENT MAINTENANCE TRAINING

|   | LLM Initial Training Curriculum Document         |
| 2.A |                                               |
| 2.B | LLM Certification/Qualification Requirements    |
| 2.C | Training Records System for LLM Personnel       |
| 2.D | Training Equipment Description                  |
| 2.E | Curriculum Subject Areas                        |
| 2.F | Vendor or Vendor’s Outside Parts Procedures and LLM Program Compatibility |
| 2.G | Component Tracking and Control Procedures       |
| 2.H | Component Mods and Changes (Airworthiness Directives (AD), Engineering Orders (EO), etc.) Tracking Procedures |
| 2.I | LLM Recording and Reporting Procedures for System Malfunctions |
| 2.J | LLM Software Install, Test, Update, Evaluate, Control Procedures |
| 2.K | MEL Procedures (Remarks Section, Limitations, Upgrade/Downgrade) |
| 2.L | LMM Required Inspection Items (RII) Components, Systems, and Software |
| 2.M |                                                  |
| 2.N |                                                  |
| 2.O |                                                  |
| 2.P |                                                  |
| 2.Q |                                                  |

3. TEST EQUIPMENT/CALIBRATION STANDARDS

|   | Required Accuracy and Reliability Primary/Secondary Standards |
| 3.A |                                                  |
| 3.B | Contract Maintenance or Vendor Test Equipment Reliability Procedures |
| 3.C | Dedicated LMM Test Equipment Listing               |
### 4 RETURN TO SERVICE PROCEDURES

- **A** LMM Upgrade/Downgrade Procedures
- **B** Interdepartmental LLM Aircraft Status Notification Procedure
- **C** Component/System Testing Level Requirements
- **D** Built-In Test Equipment (BITE) Procedures
- **E** Contractor/Vendor Training and Authorization for Return to Service

### 5 PERIODIC AIRCRAFT SYSTEM EVALUATIONS

- **A** Logbook Entry Procedures
- **B** Recordkeeping Procedures
- **C** Avionics/Airframe Manufacturers Procedures
- **D** Engineering Analysis Procedures

### 6 RELIABILITY REPORTING AND QUALITY CONTROL

- **A** Operator Use Suitability Demonstration (OUSD) Report
- **B** Monthly Summary Report (following OUSD to certificate-holding district office (CHDO)) Format
- **C** Reliability and Reporting Requirements After 1-Year Period (6.B)

### OPERATOR’S DOCUMENT APPLICATION PACKAGE

- **A** LLM Initial/Recurrent Training Program
- **B** LLM Personnel Records System
- **C** MEL Procedures
- **D** LLM QC and QA Program
- **E** Return to Service Procedures
### Table 4-5. Special Authorization Category I, Special Authorization Category II, and Category II RVR 1000 Authorization

<table>
<thead>
<tr>
<th>Requested</th>
<th>Current Authorization</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Special Authorization (SA) CAT I</td>
<td>CAT II or III authorized using Head Up Display (HUD)</td>
<td>Review operator procedures and authorize operations specification (OpSpec)/management specification (MSpec)/letter of authorization (LOA).</td>
</tr>
<tr>
<td>SA CAT I</td>
<td>CAT II or III not authorized using HUD</td>
<td>CAT II or III approval process required.</td>
</tr>
<tr>
<td>SA CAT II</td>
<td>CAT II or III authorized using autoland or HUD to touchdown</td>
<td>Review operator procedures and authorize OpSpec/MSpec/LOA.</td>
</tr>
<tr>
<td>SA CAT II</td>
<td>CAT II or III not authorized using autoland or HUD to touchdown</td>
<td>CAT II or III approval process required. SA CAT II may be authorized concurrent with Runway Visual Range (RVR) 1200 CAT II minimums when using autoland or HUD to touchdown.</td>
</tr>
<tr>
<td>CAT II RVR 1000</td>
<td>CAT II or III authorized using autoland or HUD to touchdown</td>
<td>Review operator procedures and authorize OpSpec/MSpec/LOA.</td>
</tr>
<tr>
<td>CAT II RVR 1000</td>
<td>CAT II or III not authorized using autoland or HUD to touchdown</td>
<td>CAT II or III approval process required. SA CAT II may be authorized concurrent with RVR 1200 CAT II minimums when using autoland or HUD to touchdown.</td>
</tr>
</tbody>
</table>
Figure 4-7.  Example of Completed Flight Operations Job Aid for Parts 91, 91K, and 125

<table>
<thead>
<tr>
<th></th>
<th>FLIGHT OPERATIONS</th>
<th>Operator’s Reference Document</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>OPERATOR PROCEDURES</td>
<td>OM = Operations Manual</td>
</tr>
<tr>
<td>✓</td>
<td>1.A Type of Operation</td>
<td>OM, 1.1.0 and 1.2.0</td>
</tr>
<tr>
<td>✓</td>
<td>1.B CAT II and CAT III Instrument Approach Procedures (IAP)</td>
<td>OM, 1.4, 1.5, and 1.6</td>
</tr>
<tr>
<td>✓</td>
<td>1.D Crew Coordination and Monitoring Procedures</td>
<td>OM Chapter 1</td>
</tr>
<tr>
<td>✓</td>
<td>1.E Callouts</td>
<td>OM Chapter 1</td>
</tr>
<tr>
<td>✓</td>
<td>1.F Use of Decision Altitude (DA)/Decision Height (DH) (Fail Passive (FP))</td>
<td>OM Chapter 1</td>
</tr>
<tr>
<td>✓</td>
<td>1.G Use of Alert Height (AH) (Fail Operational (FO))</td>
<td>Not applicable</td>
</tr>
<tr>
<td>✓</td>
<td>1.H Crew Briefings</td>
<td>OM Chapter 1</td>
</tr>
<tr>
<td>✓</td>
<td>1.I Configurations</td>
<td>OM Chapter 1</td>
</tr>
<tr>
<td>✓</td>
<td>1.J Non-Normal Operations and Procedures</td>
<td>OM Chapter 1</td>
</tr>
<tr>
<td>✓</td>
<td>1.K Special Environmental Considerations (as applicable)</td>
<td>Not Covered</td>
</tr>
<tr>
<td>✓</td>
<td>1.L Continuing CAT II/III Approaches in Deteriorating Weather</td>
<td>OM Chapter 1</td>
</tr>
<tr>
<td>?</td>
<td>1.M Dispatch Planning and Minimum Equipment List (MEL)/Configuration Deviation List (CDL) Requirements</td>
<td>No CAT II List (OM 3.1.3)</td>
</tr>
<tr>
<td>✓</td>
<td>1.N Aircraft System Suitability Demonstration (as required)</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>?</td>
<td>1.O Operator Use Suitability Demonstration (OUSD)</td>
<td>Need OUSD Plan</td>
</tr>
<tr>
<td>?</td>
<td>1.P Data Collection/Analysis for Airborne System Demonstrations</td>
<td>Need OUSD Plan</td>
</tr>
<tr>
<td>?</td>
<td>1.Q Operational Procedure for Return to Service</td>
<td>No Clear Procedure found</td>
</tr>
</tbody>
</table>
[Date]

[ABC Airlines (proposed CAT II/III operator)
127 North Street
Chardon, OH 44024]

Dear [Inspector]:

[ABC Airlines] operates 26 B-737-700 aircraft as a U.S. domestic part 121 operator with our operational headquarters located in Cleveland, Ohio. We conduct scheduled operations throughout the Northeast United States. Because of the predominant inclement weather (fog) during certain months of the year, we find it necessary to conduct Instrument Landing System (ILS) approaches at many of our Northeast stations.

During our last 2 years of operations, we have experienced an unacceptable rate of missed approaches, especially during the fall and winter months.

Our aircraft are equipped with a state-of-the-art avionics system that is certified by the Original Equipment Manufacturer (OEM) (Boeing) to conduct CAT II/III operations.

Please consider this [ABC]’s Letter of Intent (LOI) to apply for unrestricted CAT II and CAT III flight operations. We look forward to your advice and guidance on this very important endeavor.

Sincerely,

Captain Boe Sharp
Director of Operations
Figure 4-9. Sample Letter from the Operator to the Aircraft Certification Office

| Subject: Approval for (CAT II, CAT III, Copter ILS) Approaches | Date: |
| From: | Reply to: |
| Attn. of: |

To: Manager, Aircraft Certification Office

I am requesting assistance from the Aircraft Certification Office in determining whether the aircraft referenced below can be approved to conduct CAT II ILS approach procedures to less than 200 feet DH using the following aircraft/equipment:

Aircraft Model: ________________________________
Serial Number: ________________________________
Registration Number: __________________________
IFR Approval Basis: ____________________________(supplement or STC number)
Displays: _____________________________________(EFS 40, EDZ-756, etc., or mechanical)
Autopilot Model: ________________________________
Flight Director Model: __________________________
Radio Altimeter: ________________________________
Avionics Suite: _________________________________

Additional Information: _________________________(single-pilot, dual-pilot, etc.)

If you need additional information, please contact [name of applicant] at [telephone number] or FAA Aviation Safety Inspector (ASI) [name] at [telephone number].
Figure 4-10. Compliance Statement Examples

**Example 1. Compliance Statement. Table of Contents**

NOTE: The table of contents in the operator’s application package should mirror the table of contents contained in Advisory Circulars (AC) 120-29 and AC 120-28, as follows.

**Lower Minimum Program (LMP) Application**

**CAT II and CAT III Automatic Landing Operations**

**TABLE OF CONTENTS**

**Volume I**

1. General
2. Related References and Definitions
3. Background
4. Operational Concepts
5. Airborne System Requirements
6. Procedures
7. Training and Crew Qualifications
8. Airports, Navigation Facilities, and Meteorological Criteria
9. Continuing Airworthiness/Maintenance
10. Approval of U.S. Operators
11. Operator Reporting, and Taking Corrective Actions

**Example 2. Compliance Statement Section 1, General**

ABC Airlines, Inc. Lower Minimum Program (LMP) Application
CAT II and CAT III Automatic Landing Operations

**SECTION 1. GENERAL**

1. The ABC Airlines, Inc. Lower Minimum Program (LMP) Application, Volumes I and II are prepared and hereby submitted to demonstrate compliance with the FAA directives pertaining to CAT II, III, and autoland operations for the purposes of receiving FAA approval via operations specifications (OpSpecs).

2. Per the requirements contained in AC 120-29 and AC 120-28, ABC Airlines, Inc. requests the issuance of OpSpecs/management specifications (MSpecs) C059, C060,
and C061 for the B-737-700. Samples of these OpSpecs are included at the end of this section. These OpSpecs are necessary to authorize automatic landings and CAT II operations to a decision height (DH) of 100 feet and a corresponding Runway Visual Range (RVR) of 1200. CAT III operations to a DH of 50 feet and RVR of 700 feet are simultaneously applied for and here incorporated. AC 120-28, section 10.12, page 81, Initiating New Combined CAT II and CAT III programs, sets forth the acceptable provisions for the ABC Airlines, Inc. combined LMP application methodology.

3. The Compliance Table (Section 1, Page 2, Table 1) sets forth each prerequisite on the following pages. Moreover, AC 120-28 and AC 120-29 are referenced throughout.

4. This application is constructed in a manner that demonstrates compliance with each applicable paragraph of AC 120-29 and each applicable section of AC 120-28. ABC Airlines, Inc. compliance statements begin in Volume 1, Section 2, and page 1 of this application. Paragraphs/sections listed under the reference column describe how ABC Airlines, Inc. has achieved compliance with AC 120-29 and AC 120-28. A source document column lists the reference document title, section/chapter, and page numbers.

WEATHER MINIMUMS OBJECTIVES

1. ABC Airlines, Inc. seeks an initial automatic landing authorization with CAT I landing weather minimums or better and DH. After the satisfactory completion of 100 autolands with a 90% success rate has been demonstrated, CAT II minimums (100 DH/RVR 1200) can be authorized, as set forth in FAA Order 8900.1.

2. After successful completion of the 6-month Operator Use Suitability Demonstration (OUSD) period, ABC Airlines, Inc. seeks CAT III landing weather minimums of not less than 50 feet above the touchdown zone (TDZ) and not less than RVR 700.

Example 3. Compliance Statement: Compliance Statement Format (Operations)

SECTION 3. BACKGROUND (OPERATIONS)

<table>
<thead>
<tr>
<th>Advisory Circular Reference</th>
<th>Source Document</th>
<th>FAA Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major changes addressed in this revision (AC 120-29 and AC 120-28).</td>
<td>AC 120-29, paragraph 3.1, page 2</td>
<td></td>
</tr>
<tr>
<td>ABC Airlines, Inc. does not seek approval for low visibility approaches using Head Up Displays (HUD), use of Required Navigation Performance (RNP), satellite-based navigation, engine inoperative CAT II or III approaches.</td>
<td>AC 120-28, section 3.1, page 2</td>
<td>B-737-700 FOTM, page 4.19</td>
</tr>
</tbody>
</table>
Relationships of operational authorizations for CAT I, II, or IIIa and airborne system demonstrations (AC 120-29 and AC 120-28).

The B-737-700 is type certificated (TC) by the Original Equipment Manufacturer (OEM) as a CAT IIIa aircraft. No initial airworthiness demonstration of airborne equipment and systems is required.

Applicable criteria (AC 120-29 and AC 120-28).

AC 120-29 and AC 120-28 have been used to establish CAT II/III operations. ABC Airlines, Inc. will comply with AC 120-29 and AC 120-28 criteria.

CAT I, II, and III terminology (AC 120-29).


SECTION 4. OPERATIONAL CONCEPTS (OPERATIONS)

<table>
<thead>
<tr>
<th>Advisory Circular Reference</th>
<th>Source Document</th>
<th>FAA Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classification and applicability of minimums (AC 120-29 and AC 120-28). ABC Airlines, Inc. is seeking CAT III operations. ABC Airlines, Inc. will be conducting operations using approved autoland systems and procedures. There is no proof of concept required. The airplane and its associated systems have demonstrated the necessary level of accuracy, integrity, and availability. This was shown initially during the OEM type certificate (TC) airworthiness demonstrations. Compliance will be confirmed during the OUSD and will be monitored by ABC Airlines, Inc. on a continuing basis.</td>
<td>AFM, Section 1, page 18 AFM, Section 4, pages 4A, 5, 5A, 6, 7</td>
<td></td>
</tr>
<tr>
<td>Landing (AC 120-29 and AC 120-28). Approach and Landing Concepts and Objectives (AC 120-29).</td>
<td>AC 120-29, paragraph 4.3.1, pages 4-5</td>
<td></td>
</tr>
</tbody>
</table>
ABC Airlines, Inc. is currently a CAT I operator. By this application and approval process, ABC Airlines, Inc. is seeking authorization for CAT II approaches to a DH of not less than 100 feet with a RVR of not less than 1,200 feet, and CAT III approaches to a DH of not less than 50 feet with a RVR of not less than 700 feet.

AC 120-28, Section 10.9, pages 79-80.
AC 120-28, Section 10.12, page 81.

---

**Example 4. Compliance Statement: Format (Maintenance)**

**SECTION 9. CONTINUING AIRWORTHINESS/MAINTENANCE (AVIONICS)**

<table>
<thead>
<tr>
<th>Advisory Circular Reference</th>
<th>Source Document</th>
<th>FAA Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>(15) Land verify test is required every 30 days to remain in CAT IIIa operational status.</td>
<td>Lower Landing Minimums (LLM) Configuration Maintenance Procedures (CMP), page 5, subparagraph E.1.b.3 LLMCMP, pages 10–11, subparagraph F.1.b</td>
<td></td>
</tr>
<tr>
<td>9.3 Initial and recurrent maintenance training (AC 120-29).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) ABC’s CAT II/III personnel maintenance training program defines the LLMCMP policies and procedures for low visibility and lower landing minimums operations. Personnel qualifications, syllabi, and recurrent training are outlined in the Maintenance Training Manual.</td>
<td>LLMCMP, page 9-10, subparagraph E.1.j TSAA Maintenance Training Manual, Section 6-02, page 22 TSAA Maintenance Training Manual, Section 7-02, page 37</td>
<td></td>
</tr>
</tbody>
</table>
A. ABC Air Transport has submitted a CAT II/III operations manual (OM) containing nine tabbed sections, named as follows:

1) Table of Contents  
2) Preface  
3) Log of Revisions  
4) List of Effective Pages  
5) Chapter 1  
6) Chapter 2  
7) Chapter 3  
8) Chapter 4  
9) Appendix

B. It is noted that the List of Effective Pages (LEP), pages 1 and 2, have been marked FAA-approved with an effective date of 6/28/09; however, the FAA has not yet approved this OM.

C. The following is a list of concerns after review by the regional All Weather Operations Specialist (AWOS):

1) The table of contents for Chapter 1 does not list or refer in any way to CAT II procedures and instructions, while in fact the OM purports to apply to CAT II/III procedures and instructions.

2) Section 1.2.0, line 1, refers to “this CAT III manual” when in fact the OM is labeled “CAT II/III Operating Manual.”

3) The second full paragraph in Section 1.2.0 states, “The airplane to which this Manual applies may be used to conduct CAT III operations provided the instruments and items of equipment listed herein that are required for a particular CAT III operation are,” but does not state that it can be used to conduct CAT II operations.

4) Throughout the OM, CAT II and CAT III procedures and instructions are not clearly separated, resulting in some confusion to the reader. Paragraph 6.1.7 in the current edition of AC 120-28 states, “The operator should assure that to the greatest extent possible, procedures for Category III are consistent with the procedures for that operator for Category II and Category I to minimize confusion about which procedure should be used or to preclude procedural errors.”

5) In the section Pitch Modes in the ALT ACQ item, there is a typo in the word “V?S.”
MEMO

To: ABC Airlines

Subject: ABC Airlines Inc. B-737-800, CAT II/III Operations

From: Principal Operations Inspector (POI)

This is to inform you that the CAT II/III application package submitted on [indicate date] has been disapproved for the following reasons:

[list reasons for disapproval]

The application package is being returned in its entirety. Please make the corrections noted and resubmit to this office within 15 days of receipt of this letter. If you have any questions, please feel free to contact this office during regular business hours [indicate hours] at the following telephone number [indicate number].

If you have any further questions concerning this matter, please contact POI [name] at [phone number].

Sincerely,

[POI’s signature]
Figure 4-13. Sample Memo of Approval of a Category II/III Application Package

<table>
<thead>
<tr>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>To: Principal Operations Inspector (POI)/Certificate Management Office (CMO)</td>
</tr>
<tr>
<td>From: Kent Brockman, Manager, NextGen Branch, AGL-220</td>
</tr>
<tr>
<td>Prepared by:</td>
</tr>
<tr>
<td>Subj: INFORMATION: ABC Airlines Inc. B-737-800, CAT II/IIIa Operations</td>
</tr>
</tbody>
</table>

We have completed our Operational/Airworthiness review of the ABC Airlines Inc. application for fail passive (FP) CAT II/III approval for their B-737-800 aircraft and find they meet all the provisions set forth in the applicable advisory circulars (AC) and FAA orders.

We recommend approval be granted to initiate ABC’s Operational Use Suitability Demonstration (OUSD) as soon as practical. After successful completion of the OUSD, CAT II minimums (Decision Height (DH) 100/Runway Visual Range (RVR) 1200) may be authorized in accordance with the following provisions:

1. ABC Airlines must perform 50 landings at CAT I minimums or better, with a 90% success rate. Upon completion of these landings, a CAT II authorization with a DH of 100 feet and a RVR 1200 minimum may be authorized. This completes the OUSD landing phase.

2. ABC Airlines must then complete a 6-month OUSD demonstration phase. Upon successful completion of the demonstration phase, a CAT III authorization with an altitude height (AH) of 100 feet and a RVR 600/400/advisory minimum may be authorized.

If you have any further questions concerning this matter, please contact Inspector [name]. Call All Weather Operations Specialist (AWOS) in AGL-220 at 847-294-4670.
Table 4-5A. Summary of Category II/III Approval Requirements

<table>
<thead>
<tr>
<th>Operator Experience</th>
<th>Level Sought</th>
<th>New Aircraft</th>
<th>Initial Mins</th>
<th>Number of Landings</th>
<th>Mins #2</th>
<th>OUSD</th>
<th>Mins #3</th>
<th>OUSD</th>
<th>Mins #4</th>
</tr>
</thead>
<tbody>
<tr>
<td>New CAT II</td>
<td>Yes</td>
<td>CAT I</td>
<td>100</td>
<td></td>
<td>RVR¹ 1600</td>
<td>6 months</td>
<td>RVR¹ 1200</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>New CAT III</td>
<td>Yes</td>
<td>CAT I</td>
<td>100</td>
<td></td>
<td>RVR¹ 1200</td>
<td>6 months</td>
<td>RVR² 700 or 600</td>
<td>6 months</td>
<td>RVR² 400 or 300</td>
</tr>
<tr>
<td>CAT II CAT II</td>
<td>Yes</td>
<td>CAT I</td>
<td>50</td>
<td></td>
<td>RVR¹ 1600</td>
<td>6 months</td>
<td>RVR¹ 1200</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>CAT II CAT II</td>
<td>Same A/C and new equipment</td>
<td>CAT I</td>
<td>25, 3-month OUSD concurrent</td>
<td>RVR¹ 1600</td>
<td>3 months</td>
<td>RVR¹ 1200</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>CAT II CAT III</td>
<td>Same A/C and new equipment</td>
<td>CAT I</td>
<td>50</td>
<td></td>
<td>RVR 1200</td>
<td>6 months</td>
<td>RVR² 700 or 600</td>
<td>6 months</td>
<td>RVR² 400 or 300</td>
</tr>
<tr>
<td>CAT II CAT III</td>
<td>Same A/C and new equipment</td>
<td>CAT II</td>
<td>25, 3-month OUSD concurrent</td>
<td>RVR 700 or 600</td>
<td>3 months</td>
<td>RVR 400 or 300</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>CAT II CAT III</td>
<td>Yes</td>
<td>CAT I</td>
<td>50</td>
<td></td>
<td>RVR¹ 1200</td>
<td>6 months</td>
<td>RVR² 700 or 600</td>
<td>6 months</td>
<td>RVR² 400 or 300</td>
</tr>
<tr>
<td>CAT III CAT II</td>
<td>Yes</td>
<td>CAT I</td>
<td>50</td>
<td></td>
<td>RVR¹ 1600</td>
<td>6 months</td>
<td>RVR¹ 1200</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>CAT III CAT III</td>
<td>Same A/C and new equipment</td>
<td>CAT I</td>
<td>50</td>
<td></td>
<td>RVR¹ 1200</td>
<td>6 months</td>
<td>RVR² 700 or 600</td>
<td>6 months</td>
<td>RVR² 400 or 300</td>
</tr>
<tr>
<td>CAT III CAT III</td>
<td>Same A/C and new equipment</td>
<td>CAT II</td>
<td>25, 3-month OUSD concurrent</td>
<td>RVR 700 or 600</td>
<td>3 months</td>
<td>RVR 400 or 300</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

¹ RVR 1600 and RVR 1200 are issued via OpSpec, MSpec, or LOA C059 (H108 for helicopter operations). See paragraph 4-193, Operator Authorization—SA CAT I, SA CAT II, CAT II RVR 1000, for approval of SA CAT I, SA CAT II, or CAT II RVR 1000.

² RVR 700, RVR 600, RVR 400, and RVR 300 minimums are issued via OpSpec, MSpec, or LOA C060 (H109 for helicopter operations). Aircraft certified for CAT IIIa operations are limited to RVR 700. Certified fail passive (FP) landing systems are eligible for minimums as low as RVR 600 TDZ, RVR 400 MID. Fail operational (FO) landing systems are eligible for minimums as low as RVR 300, based on the type of rollout system.

³ A second OUSD and all reporting requirements are required even if the operator is not seeking RVR 400 or 300 minimums.
Figure 4-14. Sample Operator Use Suitability Demonstration Plan

1) This Operator Use Suitability Demonstration (OUSD) plan contains direction and guidance to be utilized by ABC Airlines, Inc. personnel responsible for conducting and managing demonstration instrument landing system (ILS)-coupled approach and automatic landings required for FAA issuance of operations specification (OpSpec) C059. It shall also provide applicable guidance and direction for required follow-on demonstration landings to be required for FAA issuance of OpSpec C060.

   a) The Director of Operations (DO) is responsible for implementation of all operational procedures required by this OUSD plan. The Director of Maintenance (DOM) is responsible for implementation of all maintenance procedures required by this OUSD plan. They are jointly responsible for providing routine and regular updates and feedback to ABC Inc.’s principal operations inspector (POI), principal maintenance inspector (PMI), and principal avionics inspector (PAI). Operational/airworthiness demonstrations, aircraft system suitability, and operational use suitability demonstrations must be completed as described in Advisory Circular (AC) 120-29, Criteria for Approval of Category I and Category II Weather Minima for Approach, paragraphs 10.5.1 and 10.5.2, unless otherwise specified by the certificate-holding district office (CHDO). AC 120-28, Criteria for Approval of Category III Weather Minima for Takeoff, Landing, and Rollout, specifies similar OUSD requirements for CAT III approval. Once ABC is approved for CAT II operations, this plan will be updated with the appropriate CAT III OUSD requirements. The purpose of these operational demonstrations is to determine or validate the use and effectiveness of the applicable aircraft flight guidance systems, training, flightcrew procedures, maintenance program, and manuals applicable to the program being approved. ABC’s B-737-700 FAA-approved Aircraft Flight Manual (AFM) references both ACs as the criteria used as the basis for both CAT II and CAT III airworthiness demonstrations; therefore our B-737-700 fleet is already considered to meet the provisions of 10.5.1. This OUSD plan is designed to address provisions of 10.5.2, requiring verification of OUSD for initial CAT II approval.

   b) For CAT II authorization, at least 100 landings will be accomplished in line operations using the autoland system, with a success rate of at least 90 percent.

   NOTE: It is a good practice to conduct at least one approach using the autoland system to each runway intended for CAT II operations in weather better than that requiring use of CAT II minimums. Such demonstrations may be conducted in line operations, or during training or ferry flights. In any case, every demonstration autoland must be conducted in weather equal to or greater than ABC Inc.’s current CAT I operating minimums: 200 feet decision altitude (DA), Runway Visual Range (RVR) 1800.

   1. If an excessive number of failures (e.g., unsatisfactory landings or system disconnects) occur during the landing demonstration program, a determination will be made for the need for additional demonstration landings, or for consideration of other remedial action (e.g., procedures adjustment, wind constraints or system modifications).

   2. The system must demonstrate reliability and performance in line operations consistent with the operational concepts specified in and required by OpSpec C059, Category II Instrument Approach and Landing Operations (Optional: 14 CFR parts 91, 121, 125, 125 Letter of Deviation Authority (LODA) holder, 135, and 91K Operators) and Special Authorization Category I Instrument Approach and Landing Operations (Optional: Part 91 Operators).

   3. Landing demonstrations will generally be accomplished on U.S. facilities or international facilities acceptable to the FAA. International facilities acceptable to the FAA are published at the Flight
4. At ABC Inc.’s discretion, demonstrations may be made on other runways and facilities if sufficient information is collected to determine the cause of any unsatisfactory performance (e.g., critical area was not protected). No more than 50 percent of the demonstrations may be made on such facilities.

5. U.S. Facilities Approved for CAT II and CAT III Demonstrations. U.S. ILS facilities that have published Title 14 of the Code of Federal Regulations (14 CFR) part 97 CAT II or CAT III instrument approach procedures (IAP) are acceptable for CAT II and CAT III demonstrations.

6. Foreign Facilities Approved for CAT II and CAT III Demonstrations. Only those approved foreign ILS facilities listed on the Flight Technologies and Procedures Division (AFS-400) Web site (http://www.faa.gov/about/office_org/headquarters_offices/avs/offices/afs/afs400/afs410) are approved for U.S. air carriers to conduct CAT II and/or CAT III demonstrations.

NOTE 1: Every demonstration autoland must be conducted in weather equal to or greater than ABC Inc.’s current CAT I operating minimums: 200 feet DH, RVR 1800.

NOTE 2: For takeoff or landing operations less than RVR 1200, air carriers must have low visibility training in accordance with the current edition of AC 120-57, Surface Movement Guidance and Control System.

2) Documentation.

a) ABC monitors aircraft maintenance performance trends through the Continuous Analysis and Surveillance Program (CASP). CASP is designed to assist in detection and correction of recurring problems in the B-737-700 fleet. CASP action is predicated on the inbound Boeing Airlines for America (A4A) codes entered in the logbook. Should any A4A code be entered in the logbook three times or more in any 20-day period, the item will be flagged and analyzed for systemic corrective action by the engineering department. Therefore, it is extremely important for crewmembers to enter the correct A4A code when making logbook entries, particularly when related to the aircraft autoflight system and autoland performance. Flightcrews will use form ABC OUSD-1 (sample below) to record all unsatisfactory autoland approaches. A logbook entry is also required for any unsatisfactory autoland. Forms ABC OUSD-1 will be left with the aircraft logbook for scanning into the maintenance tracking system (retained for 1 year). This information will also be retrieved by the CASP and published monthly in the Fleet Maintenance CASP Report. All autoflight system history is also available in the maintenance tracking system by the applicable A4A chapter.

NOTE: The crew is responsible to notify dispatch of all autolands by Aircraft Communications Addressing and Reporting System (ACARS) message at the end of each flight. Dispatch will ensure that maintenance control is notified of all autolands in a timely manner so that appropriate recordkeeping and maintenance action can be taken. In the event of an unsuccessful autoland, the crew shall submit an Autoland Discrepancy Form in addition to the ACARS report. If ACARS is inoperative or not installed, the flightcrew must submit an Autoland Discrepancy Form to the chief pilot.

b) Autoland messages are accessed through ACARS, page 2 of the FLT Summary page, Automatic Approach, as in the following example:
Example: Autoland Messages on ACARS Page 2 of Flight Summary

FLIGHT SUMMARY PAGE 2: AUTOMATIC APPROACH

(1) Enter required information as follows:

1. Select YES;
2. Enter RUNWAY used;
3. Enter reported RVR visibility in feet;
4. Enter SAT or UNSAT, as appropriate for the autoland;
5. Enter DISC ALT disconnect altitude in feet or enter 0 (zero) for full autoland; and
6. SEND when all required fields are filled.

(2) Reporting Requirements. Upon receipt of an ACARS, FLIGHT SUMMARY, AUTOMATIC APPROACH message in dispatch, maintenance control will enter all data on a CAT II OUSD tracking spreadsheet and forward the message to the following management personnel:

1. Director of Operations (DO), Captain Boe Sharp.
2. Director of Maintenance (DOM), Ken Johnson.

c) During each morning meeting for the duration of this OUSD, maintenance control will brief all attendees as to the current status of OUSD landings, including the following statistics:

- Autolands attempted: previous 24 hours;
- Satisfactory autolands: previous 24 hours;
- Unsatisfactory autolands with preliminary reasons;
- Total satisfactory autolands to date;
- Total unsatisfactory autolands to date; and
- FAA feedback, if any.

1. Should there be any unsatisfactory autolands reported, the DOM and the DO are jointly responsible to determine whether maintenance factors, operational factors, or some combination thereof are responsible for the unsatisfactory autoland and to develop appropriate remedial procedures.

2. Additionally, maintenance control is responsible for maintaining a current and inspectable OUSD file of all relevant email messages and B-737-700 Autoland Discrepancy Forms. This file may be maintained in electronic format or by the maintenance tracking system with scanned B-737-700 Autoland Discrepancy Forms.

d) Form ABC OUSD-1, B-737-700 Autoland Discrepancy Form. Flightcrews will use Form ABC OUSD-1 to record all unsatisfactory autoland approaches. An unsuccessful autoland is defined as follows:

- Aircraft fails to maintain runway track within ± 22 feet of centerline (CL);
- Drift rate exceeds 2 feet per second;
- Aircraft does not touch down within the touchdown zone (TDZ);
• Autoflight system does not maintain the aircraft within required performance parameters when within the decision region; and
• Any other performance abnormality (e.g., early autoflight disconnect, failure to ALIGN, failure to FLARE, failure to RETARD autothrottles, or failure to rollout properly).

1. A logbook entry is required for any unsatisfactory autoland. Forms ABC OUSD-1, B-737-700 will be left with the aircraft logbook for scanning into the maintenance tracking system (retained for 1 year). This information will also be retrieved by the CASP and published monthly in the Fleet Maintenance CASP Report.

2. All autoflight system history is also available in the maintenance tracking system by the applicable A4A chapter.

---

Sample Autoland Discrepancy Form
ABC OUSD-1, B-737-700, Autoland Discrepancy Form (Front)

This form will be completed whenever an approach is attempted using the airborne low approach system, regardless of whether the approach is abandoned or concluded successfully.

CAT II/IIIa APPROACH EVALUATION

CAT II ☐ CAT IIIa ☐ Autoland Yes ☐ No ☐

Pilot in Command (PIC)______________________________
Second in Command (SIC)______________________________

Date ________ Registration No. ________________ Airport ID ________________
Rwy ________ Wx______________________________ Wind____________________

APPROACH EVALUATION:

Was the approach successful? Yes ________ No ________

Flight control guidance system used:

Auto-coupler ____________________
Flight director ____________________

Airspeed at middle marker ± at ________ 100' ± ________ from programmed speed?

If unable to complete the approach, indicate the cause:

Airborne equipment ☐ Ground equipment ☐ ATC (air traffic control) ☐ Other ☐
Identify and describe nature of deficiency.

<table>
<thead>
<tr>
<th>Date: 3/21/16</th>
<th>FY16 SECOND QUARTER EDITORIAL UPDATES</th>
<th>8900.1 CHG 225</th>
</tr>
</thead>
<tbody>
<tr>
<td>8900.1 CHG 225</td>
<td>Vol 4 Ch 2 Sec 2 Page 148</td>
<td>UNCONTROLLED COPY WHEN DOWNLOADED</td>
</tr>
<tr>
<td>Check with FSIMS to verify current version before using</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**ABC OUSD 1, B-737-700, Autoland Discrepancy Form (Back)**

**AUTOLAND CRITERIA**

An unsuccessful autoland is defined as follows:

1. Aircraft fails to maintain runway track within ± 22 feet of centerline (CL);
2. Drift rate exceeds 2 feet per second;
3. Aircraft does not touch down within the touchdown zone (TDZ);
4. Autoflight system does not maintain the aircraft within required performance parameters when within the decision region; and
5. Any other performance abnormality (e.g., early autoflight system disconnect, failure to ALIGN, failure to FLARE, failure to RETARD autothrottles, or failure to rollout properly).

A logbook entry is required for any unsatisfactory autoland.

e) Data Collection Requirements and Miscellaneous Considerations. Form ABC OUSD-1, B-737-700 was developed to allow the flightcrew to record unsatisfactory approach and landing performance. The resulting data and a summary of the demonstration data will be made available to the principal inspectors (PI) and regional Flight Standards division (RFSD) NextGen Branch (AXX-220) for evaluation. The data provided by Form ABC OUSD-1, B-737-700 include the following information:

1. Information regarding the inability to initiate an approach or identify deficiencies related to airborne equipment.
2. Information regarding abandoned approaches, stating the reasons the approach was abandoned and the altitude above the runway at which the approach was discontinued or at which the automatic landing system was disengaged.
3. Information regarding any system abnormalities that required manual intervention by the pilot to ensure a safe touchdown or touchdown and rollout, as appropriate.
4. Data Analysis. Unsatisfactory approaches using facilities approved for CAT II or III where landing system signal protection was provided should be fully documented. The following factors should be considered:
   a. Air Traffic Control (ATC) Factors. ATC factors that result in unsuccessful approaches should be reported. Examples include situations in which a flight is vectored too close to the final approach fix (FAF)/Final Approach Point (FAP) for adequate Localizer (LOC) and glide slope.
capture, lack of protection of ILS critical areas, or ATC requests for the flight to discontinue the approach.

b. Faulty Navigational Aid (NAVAID) Signals. NAVAID (e.g., ILS LOC) irregularities, such as those caused by other aircraft taxiing, overflying the NAVAID (antenna), or where a pattern of such faulty performance can be established should be reported.

c. Other Factors. Any other specific factors affecting the success of CAT II operations that are clearly discernible to the flightcrew should be reported. An evaluation of reports discussed above will be made to determine system suitability for authorization for CAT II operations.

5. The following precautions must be observed when conducting autolands:

a. The runway and associated instrument procedure should have no outstanding Notices to Airmen (NOTAM) or other applicable notes concerning the procedure precluding the use of the autoland system (e.g., it should not have notes such as “LOC unusable inside the threshold,” or “Glideslope unusable below xxx feet.”).

b. Suitable ILS critical area protection (or equivalent) should be requested from ATC, if applicable. Similar to precautions for a CAT II or III procedure, the crew should remain alert to detect any evidence of unsuitable system performance, whether or not critical protection is being provided.

c. Airports/runways on the CAT II/III special terrain list may not be used for initial CAT II or III autoland demonstrations. The characteristics of the prethreshold terrain or TDZ slope at these facilities may cause abnormal performance in flight control systems. Additional analysis or flight demonstrations are required for each aircraft type prior to approval of CAT II or III minimums. Should ABC Inc. intend to use autoland procedures at these specified runways, prior coordination and approval is required.

NOTE: Every demonstration autoland must be conducted in weather equal to or greater than ABC Inc.’s current CAT I operating minimums: 200 feet DA, RVR 1800.
VOLUME 4 AIRCRAFT EQUIPMENT AND OPERATIONAL AUTHORIZATIONS

CHAPTER 2 ALL WEATHER TERMINAL AREA OPERATIONS

Section 10 Safety Assurance System: Maintenance/Inspection Programs for Low Approach and Landing Minimums

4-416 REPORTING SYSTEM(S).

A. Program Tracking and Reporting Subsystem (PTRS). Use activity code 3435.

B. Safety Assurance System (SAS) Automation. This section is related to SAS Element 4.6.1 (AW), Avionics Special Emphasis Programs.

4-417 OBJECTIVE. This section provides guidance for evaluating applications for lower approach and landing minimums in respect to the appropriate support program.

4-418 GENERAL.

A. Responsibilities.

1) The Avionics aviation safety inspector’s (ASI) primary responsibility is to provide technical support to the Operations ASI and the applicant. The responsibility for monitoring all applicants during the evaluation period should be coordinated between the Avionics and Operations ASIs, to include:

   • Approvals,
   • In-flight evaluation observations, and
   • Surveillance.

2) The applicant is responsible for obtaining and submitting all documents that establish the eligibility of its aircraft, such as:

   • The required maintenance/inspection program necessary for continued eligibility;
   • The applicant’s minimum equipment list (MEL), with the limitations for Category (CAT) I operations, if applicable; and
   • An acceptable means for maintaining the reliability of the flight guidance control and associated systems.

B. Qualifications for Low Approach and Landing Minimums. Low approach and landing minimums are issued to qualified operators operating under Title 14 of the Code of Federal Regulations (14 CFR) part 91, 121, 125, 129, or 135. While the operating rules for each of these authorizations may vary significantly, the approval guidelines do not. Approval for low or minimum approaches in all categories will require regulatory compliance in the following three major areas:
• Airborne equipment and systems,
• Flightcrew and maintenance personnel qualifications, and
• Lowered minimum procedures, including a maintenance/inspection program.

C. Deviations. Deviations will not be made without coordination between the Avionics and Operations ASIs. All requests for deviations must be forwarded to the Air Carrier Training Systems and Voluntary Safety Programs Branch (AFS-280) and the Avionics Branch (AFS-360) by the Operations ASI. The applicant will be advised not to proceed in operating under its lower minimum proposal until the deviation request is resolved.

4-419 PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites.

• Knowledge of the regulatory requirements of parts 91, 121, 125, 129, and 135, as applicable.
• Successful completion of the Airworthiness Inspector Indocritnation course(s), or previous equivalent.

B. Coordination. This task requires coordination with the Avionics and Operations ASIs, the applicant, the Aircraft Evaluation Group (AEG), and the Aircraft Certification Office (ACO), if necessary.

4-420 REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions):

• Title 14 CFR Parts 23, 25, and 61.
• AC 120-28, Criteria for Approval of Category III Weather Minima for Takeoff, Landing, and Rollout.
• AC 120-29, Criteria for Approval of Category I and Category II Weather Minima for Approach.

B. Forms. None.

C. Job Aids:

• Job Task Analysis (JTA): 3.3.33, 3.3.144.
• Volume 4, Chapter 2, Section 2, Figure 4-6, Category II/III Approval Job Aid (Avionics/Airworthiness) for Parts 91, 91K, and 125.

4-421 CAT I OPERATIONS. The Avionics ASI’s responsibilities for CAT I authorizations are to evaluate the flight director (FD) and/or autopilot systems. The principal operations inspector (POI) is responsible for determining the overall suitability of an operator’s CAT I capabilities.
4-422  CAT II EQUIPMENT APPROVAL UNDER PARTS 91 AND/OR 135 (9 OR LESS).

A. Lower Approach Minimum Approval. An application for lower approach minimum authority will specify the basis for the aircraft approval to conduct lower minimum approaches. This authority will be based on:

- Type certification and the Airplane Flight Manual (AFM)/Rotorcraft Flight Manual (RFM),
- Supplemental Type Certification,
- Operational evaluation, or
- Any acceptable combination of the above.

B. Requirements for CAT II Approval.

1) Requirements for CAT II approval for General Aviation (GA) operators have been established in part 91, §§ 91.189, 91.191, 91.193, and 91.205, and part 91 appendix A (see the note below). These sections specify:
   - Required instruments and items of equipment,
   - Methods of approval,
   - Evaluation program conduct,
   - Calibration standards, and
   - Maintenance/inspection programs.

2) AC 120-29 is available to assist operators in developing and obtaining approval of CAT II equipment installations and maintenance/inspection programs.

C. Operational Evaluation Programs. Engineering coordination should be requested when necessary, particularly for those aircraft in which the functions and limitations of the automated systems are significant factors for safe operation.

D. FD Systems. Avionics ASIs will be aware that single FD systems with dual displays in which the second display repeats only the instrument landing system (ILS) information on the pilot’s display will not meet the requirements for two ILS receiving systems.

E. Optional Avionics Equipment. Optional avionics equipment installed by the operator will either be approved in the field or referred to the ACO for an engineering evaluation. The evaluation can assist in determining if flight testing is required, what limitations may apply, and whether or not the installation may require a Supplemental Type Certificate (STC). If an STC is required, Avionics ASIs will assist in the accomplishment of a compliance and conformity inspection, as necessary, when requested by the ACO. Optional equipment that may be installed and require approval includes the following:

- FD systems,
- Automatic throttle control systems,
- Autopilot and approach coupler systems,
• Speed control command systems,
• System fault detection and warning systems, and
• Radio altimeters (RA).

F. Alterations. ASIs should carefully review proposals to alter installed avionics equipment required for a particular category of operation and handle them in accordance with established procedures. Each proposal should be evaluated for its effect on system performance, compatibility with the original standard, and compliance with CAT II criteria.

1) When manufacturer-proposed alterations to existing avionics equipment appear to be major, the ASI will verify the approval status before sanctioning incorporation of the change by the operator. If Federal Aviation Administration (FAA) approval of the alteration is not clearly indicated in the manufacturer’s instructions, the operator will obtain such approval before performing the alteration.

2) An Avionics ASI will exercise a cautious approach to field approval of alterations. Pressure from any source must not discourage the Avionics ASI from verifying that the alteration is being made in accordance with approved technical data and that the technical evaluation is clearly within the scope of the Avionics ASI’s training, experience, and approval authority.

3) ASIs will also carefully examine alterations originating in an operator’s engineering department and, when necessary, refer them to the appropriate ACO.

4-423 CAT II/III EQUIPMENT APPROVAL UNDER PART 121/135 (10 OR MORE).

A. Large Aircraft Criteria. Operators using large aircraft operating under part 121 will meet the requirements in this chapter.

NOTE: AC 120-28 or AC 120-29 is available to assist operators in developing and obtaining approval of CAT II/III equipment installations and maintenance/inspections programs.

B. Turbojet Criteria. All operators using turbojet aircraft must comply with the aircraft systems evaluation criteria that applies to part 121 operators. Applicants certificated under part 135 using turbojet aircraft will also use the aircraft equipment evaluation standards.

C. Systems Evaluation Approval. Systems evaluation approval should be accomplished in accordance with AC 120-28 or AC 120-29, as applicable.

D. CAT II/III.

1) The aircraft requirements for Lower Landing Minimums (LLM) include requirements for the total aircraft performance and associated systems. The acceptance of an aircraft in either category must be completely based on performance and approved FAA data.

2) Upon receiving an operator’s request for LLM authorization, the assigned Avionics ASI should immediately contact the type certificating office. This action is to
determine whether the aircraft has been approved for such operation and what equipment and systems have been approved. If the aircraft has not been LLM certified, the ASI should request assistance from the appropriate ACO so that an application for an STC can be properly consolidated.

4-424 CONTINUOUS AIRWORTHINESS MAINTENANCE PROGRAM (CAMP) OR APPROVED AIRCRAFT INSPECTION PROGRAM (AAIP) FOR LLM.

A. Requirements. This section outlines the requirements for the CAMP, part 91K (optional), 121 or 135 and approved inspection program, parts 91K and 125. This type of operation will need a detailed evaluation supported by well-defined maintenance, training, and reliability programs. All maintenance and reliability supporting documents become part of the accepted program. A monthly utilization/reliability summary will be established for the applicable aircraft and is given to the FAA for the initial data collection/demonstration period of 1 year. Quarterly reporting after the initial period will be accomplished in accordance with the certificate holder’s reliability.

B. Initial Program. The initial program should also include appropriate programs identified in the Maintenance Review Board (MRB) document. The frequency of maintenance actions may be revised when sufficient experience has been gained to justify a change and when there is no conflict with the certification requirements. MRB-specified tasks and/or other approved maintenance procedures may be revised to ensure the required airborne equipment will continue to meet total system performance, accuracy, availability, reliability, and integrity for the operation.

C. Reliability. The reliability of systems and/or components set forth as substantiation for the LLM certification becomes the performance criteria for the program. Reliability reporting is not required for CAT I programs.

1) Controlled monitoring of the LLM system reliability will require that the operator, after initial evaluation, incorporate the pertinent systems and components into the approved reliability program. If the LLM system reliability does not meet the approved program, the operator will be allowed a reasonable time period in which to improve the reliability.

2) The ACO responsible for the type certification should be advised when the monthly removal rate is exceeded and informed of the probable cause. The reliability reporting is necessary when operational approval was based on probability analysis.

D. Maintenance Manual. The maintenance manual will identify all special techniques, maintenance/inspection frequencies, and test equipment requirements to support the program. It will also specify the method of controlling the operational status of the aircraft. Those technicians qualified to release an aircraft for LLM must be identified.

E. Procedures. The operator’s procedures must include a method for manual distribution to assure availability to the appropriate maintenance facility.

F. Method of Approval. Operators will show the method of approval of required equipment as listed in the maintenance portion of the manual.
G. Approved Training. The operator must provide an approved training and recurrent training program. The list of personnel must be current. All maintenance personnel authorized to carry out this approved maintenance program must have training on the applicable aircraft systems and the approved policy and procedures of the certificate holder’s approved LLM aircraft maintenance program authorization. Only those persons trained and qualified should be permitted to perform LLM maintenance/inspections.

H. Airborne Systems. The operational demand for LLM airborne systems with exposure to numerous hidden functions requires that the aircraft be either periodically exercised or functionally checked. This is to ensure that all systems are operational and that no dormant failure has occurred. The initial program will provide either a periodic LLM approach or periodic system functional check.

I. Experience. Until sufficient experience and data is available (excluding the 6 month demonstration), it is recommended the aircraft status period not exceed 35 days. Failure to exercise the system by simulated LLM approach or functionally checking the system within 35 days should automatically place the aircraft in a non-LLM status. The aircraft must maintain this status until the required functional check is made.

4-425 PROGRAM DEVELOPMENT.

A. Initial Development. At the time of formal application, the Avionics ASI will begin to monitor development activity. Participation in all meetings with an applicant will usually require coordination with the Operations ASI. It is important for the operator to include all key personnel in any meetings.

B. The Operator’s Lower Minimums Program. The operator’s lower minimums program must be developed and the procedures used during the evaluation period. Part D operations specifications (OpSpecs) must reflect all special LLM maintenance requirements that were developed to support repetitive evaluation of LLM systems and equipment.

4-426 MAINTENANCE/INSPECTION PROGRAMS. The proposed maintenance/inspection programs must be tailored to the applicant’s operations and maintenance organization. All maintenance and reliability supporting documents become part of the accepted program.

A. Requirements for Maintenance/Inspection Programs. Maintenance/inspection programs will provide for the proper maintenance and inspection of equipment and aircraft systems.

B. Control and Accountability. Emphasis will be placed on control and accountability of all areas associated with LLM approvals. These areas primarily encompass the following:

- Initial and recurrent training on flight guidance control systems,
- The use of test equipment,
- The differences in aircraft systems between aircraft in an operator’s fleet,
• Special procedures for airworthiness release and control of the aircraft approach status,
• Initial and recurrent training in all areas of the lower minimums program, and
• Training for new personnel and equipment types.

C. **Operational Status of the Aircraft.** The method for controlling the operational status of LLM aircraft equipment must include procedures that keep flight, dispatch, and maintenance personnel aware of that status.

D. **Purchase of Avionics Equipment Package Installations.** Some manufacturers and repair stations may develop GA maintenance/inspection programs in conjunction with their CAT II avionics equipment installation “package.” The contents of such programs should be thoroughly evaluated for compliance and maintainability with LLM regulations.

E. **Requalification Procedures.** The program must include procedures for requalification of an aircraft for lower minimums following maintenance on any required system. This must include tests after replacements, resetting in rack, and interchange of components.

F. **Approval.** The Avionics ASI will indicate approval of the maintenance program portion of the operator’s CAT II/III manual by signing and dating each page of the program. When the Avionics ASI accepts the manuals and provides them in electronic format, the operator should follow the guidance in the current version of AC 120-78, Acceptance and Use of Electronic Signatures, Electronic Recordkeeping Systems, and Electronic Manuals, to provide a means for the Avionics ASI to indicate approval of applicable CAT II/III maintenance program manual sections (e.g., electronic signature or hard copy signature page).

4-427 **MAINTENANCE TRAINING PROGRAMS.** Avionics ASIs, during the course of normal surveillance, will evaluate the maintenance facilities performing CAT II/III equipment maintenance to ensure that the training provided meets the requirements of lower minimum standards.

| 4-428 **EXISTING CAMP/AAIP.** |

A. **Develop Programs.** Programs can be developed to be compatible with the existing maintenance/inspection program, as long as there is a clear distinction between normal and lower minimum requirements.

B. **Proposal.** When an operator’s proposal is based on an existing maintenance/inspection program, the ASI must ensure that all procedures will provide for the lower minimums program requirements. Caution will be exercised when an applicant has used a program approved for use by another operator for developing its own.

C. **Proposal/Existing Program Areas for Close Review.** The following areas of the proposal and/or existing programs will be closely reviewed:

• The existing maintenance or inspection program;
• The existing reliability program;
• The training program;
• The initial evaluation checks for existing aircraft and for new aircraft;
• The existing parts pool, borrowed parts procedure, and control of spare parts; and
• An operator’s existing reliability program may be accepted when shown to be adequate for its lower minimum operations.

4-429 TEST EQUIPMENT AND STANDARDS.

A. Performance Standards, Tolerances, and Calibration Procedures.

1) Performance standards, tolerances, and calibration procedures applicable to ILS equipment have been adequately covered by:

• Technical Standard Orders (TSO),
• RTCA documents, and
• Manufacturers’ instruction manuals.

2) These standards or their equivalent are generally considered acceptable for inclusion in maintenance/inspection programs for equipment operated to the landing minimums of CAT I. Such standards may not be adequate for CAT II/III. Those that will not provide CAT system performance will be revised to provide the required level of performance.

B. LLM Tolerances. In many cases, the tolerances for CAT II/III airborne equipment are more rigid than those for CAT I. Therefore, the equipment used to inspect, test, and bench check CAT II/III equipment may require more frequent test and calibration.

C. Established Standards and Tolerances. Standards and tolerances established in the maintenance/inspection program for testing and calibrating airborne equipment and systems that are required for CAT II/III operations will not be relaxed following program approval without adequate substantiation that system performance will not be degraded.

D. Built-In Test Equipment (BITE) Test and Return to Service.

1) The BITE test is a maintenance tool that can be used for return to service if certified by the aircraft manufacturer. The proper procedure for return to service is to perform an operational ground or functional flight check. The procedures in the manufacturer’s maintenance manual, including the provisions of BITE, the fault isolation manual, the aircraft maintenance manual, and the operator’s FAA-approved MEL are all essential portions in the process for an aircraft to be returned to service.

2) For those aircraft for which BITE is minimal or non-existent or that have a mix of digital and analog equipment, a more comprehensive functional test using test procedures and equipment prescribed in the manufacturer’s maintenance manual must be accomplished before approval to return to service. On repeat discrepancies, the functional test must consist of the most comprehensive test in the maintenance manual for aircraft that have different levels of test complexities.
3) The CAT II/III maintenance manual will address the procedures for return to service.

4-430 MAINTENANCE PERIOD EXTENSIONS—GENERAL AVIATION.

A. Applications for Extensions.

1) The Flight Standards District Office (FSDO) will consider applications for extensions of maintenance periods for GA operators at the completion of one maintenance cycle of at least 12 calendar-months. Operators should apply to the FSDO having jurisdiction of the area in which the operator is located.

2) The FSDO will consider the following factors in granting an extension:

- Records of CAT II approaches due to malfunctioning equipment,
- Number of CAT II approaches (actual and simulated),
- Maintenance records of CAT II equipment failures,
- Service history of known trends toward malfunctioning,
- Unit mean time between failures (MTBF), and
- Records of functional flight checks.

B. Check, Test, and Inspection Extensions. Extensions to the check, test, and inspection periods may be granted if factors indicate that the performance and reliability of the CAT II/III instruments and equipment will not be adversely affected. GA extension periods, in most cases, would be 1 calendar-month for tests, inspections, and functional flight checks, and 4 calendar-months for bench checks. The operator’s program should include procedures for obtaining the extensions.

C. Increased Extension Periods. The extension periods suggested in subparagraph 4-430B may be increased at the discretion of the Avionics ASI.

4-431 FUNCTIONAL FLIGHT CHECKS. Some operators have submitted programs that provide for functional flight checks. This procedure must not be approved unless all airworthiness requirements have been satisfied before dispatch. In no instance can a functional flight check be substituted for the certification of complete systems or equipment operation.

4-432 REPORTS AND RECORDS.

A. Responsibilities of Recordkeeping. The owner’s/operator’s organization will provide training to persons responsible for these reports in appropriate parts of the proposed LLM program.

B. CAT III or Any Autoland Category. Operators authorized for any autoland category will provide reports of airborne equipment malfunctions during actual approaches. They will submit the reports on a yearly basis to the FAA or at any time the malfunctions significantly affect the autoland capability.
4-433 PROCEDURES.

A. Review the Maintenance/Inspection Program. Review the applicant’s maintenance/inspection program to ensure that it contains control and accountability over the following:

- All maintenance accomplished on lower minimum required systems and equipment;
- All alterations to systems and equipment;
- Approach status of each aircraft at all times;
- Return to service procedures to upgrade aircraft to CAT II/III status;
- Spare equipment;
- Maintenance calibration, use of test equipment, and records/reporting requirements;
- Repetitive and chronic discrepancies to ensure the affected aircraft remains out of lower minimums approach status until positive corrective actions is made; and
- All aircraft in the fleet that have not been evaluated for lower minimums approaches.

B. Review the Existing Maintenance/Inspection Programs. Ensure that the existing maintenance/inspection program has procedures for the following:

- Identifying chronic discrepancies and corrective action followup;
- Keeping aircraft with chronic and/or repetitive discrepancies out of a lower minimum status until positive corrective action is taken;
- Training maintenance personnel assigned to reliability analysis;
- Conducting initial evaluation checks for existing aircraft and for new aircraft to the fleet before inclusion in the operator’s lower minimum operations;
- A means for identifying all CAT II/III components used in the applicable aircraft systems in the existing parts pool, parts borrowing procedure, and control of spare parts;
- Ensuring that calibration standards for all test equipment used for maintaining lower minimum systems and equipment are met;
- Ensuring that each flightcrew and persons with operational dispatch authority are aware of any equipment malfunction that may restrict lower minimum operations; and
- Submitting any changes to the LLM maintenance program to the FAA for acceptance and approval by the principal avionics inspector (PAI) before any changes are adopted.

C. Review the Functional Flight Checks. If a functional flight check has been submitted, ensure that the following information is included:

- Maintenance clearance and/or concurrence before an aircraft is returned to a lower minimum status, even if the functional flight check was found to be satisfactory;
• Request for a flight check by maintenance in the aircraft log; and
• Maintenance entry acknowledging the results and the action taken.

D. Evaluate the Supporting Data. Unless the applicant provides supporting approval data, the Avionics ASI will coordinate with the Operations ASI and the ACO responsible for the type certificate (TC) to determine the acceptability of each aircraft for the authorizations requested.

E. Review the MEL. Appropriate sections of the MEL must be revised to identify CAT II/III required systems and special procedures, if applicable.

F. Review the Personnel Training Requirements. Ensure that there are procedures for the following:

1) All maintenance personnel involved and authorized to carry out this approved maintenance program must have initial and recurrent specialized training on the applicable aircraft systems and the approved policy and procedures of the certificate holder’s approved LLM aircraft maintenance program authorization.

2) Ensuring personnel contracted to perform CAT II/III related maintenance are qualified and the program requirements are made available to these persons.

3) Personnel not qualified to perform maintenance on CAT II systems and equipment, including flightcrew and dispatch, will be trained in the airworthiness release requirements of the lower minimums program.

4-434 TASK OUTCOMES.

A. Complete the PTRS.

B. Follow SAS Guidance for Modules 4 and 5.

C. Complete the Task. The POI has the primary responsibility to grant the operator approval for lower minimums after concurrence from the regional Flight Standards division (RFSD) (AXX-200). It is the Avionics ASI’s primary responsibility to evaluate and approve the CAT II/III maintenance requirements and associated support programs after concurrence of the RFSD. Successful completion of this task will therefore consist of coordination with the Operations ASI for sending all original CAT II and III documentation to the RFSD for review and concurrence.

4-435 FUTURE ACTIVITIES. None.

RESERVED. Paragraphs 4-436 through 4-450.
4-1666 REPORTING SYSTEM(S).

A. Program Tracking and Reporting Subsystem (PTRS). Use PTRS activity codes: 3337, 3316, 3411, 5337, 5316, and 5411.

B. Safety Assurance System (SAS). This section is related to SAS Element 4.4.4 (AW), Aircraft Acceptance Process.

4-1667 OBJECTIVE. The objective of this section is to provide instructions and guidance to aviation safety inspectors (ASI) when tasked to issue or amend Operations Specification (OpSpec) D085, Aircraft Listing, for:

- An existing air carrier/operator adding an additional aircraft (newly manufactured or used) of the same make and model that the operator is currently operating, or
- An existing air carrier/operator that adds a new make and model (type) of aircraft to its operations.

4-1668 GENERAL. An aircraft must meet the following conditions for airworthiness.

A. Type Certificate (TC). The aircraft must conform to its TC. An aircraft conforms to its TC and type design when the aircraft configuration and the installed components are consistent with the drawings, specifications, and other data that are part of the TC. This also includes conformity to any Supplemental Type Certificate (STC) and field-approved alterations to the aircraft.

B. Condition for Safe Operation. The aircraft must be in a condition for safe operation. The condition of the aircraft relative to wear and deterioration (skin corrosion, window delaminating and crazing, fluid leaks, tire wear, etc.) must be acceptable. (Refer to Federal Aviation Administration (FAA) Order 8130.2, Airworthiness Certification of Products and Articles, current edition.)

C. Standard Airworthiness Certificate. The aircraft must have a standard airworthiness certificate. This certificate remains valid as long as the aircraft:

- Meets its approved TC;
- Is in a condition for safe operation; and
- Maintenance, preventative maintenance, and alterations are performed in accordance with Title 14 of the Code of Federal Regulations (14 CFR) parts 21, 43, and 91.
D. Aircraft Flight Manual (AFM). The aircraft must conform to the “Limitations” and “Supplement” sections within the approved AFM.

4-1669 PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites.
   - Completion of the Airworthiness Inspector Indoctrination course or equivalent.
   - Knowledge of the regulatory requirements of 14 CFR parts 91, 121, and 135.

B. Coordination. This task requires coordination with the assigned operations inspector and/or the Flight Standards National Field Office (FSNFO), AFS-900, for part 121, if necessary.

4-1670 REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions):
   - Parts 91, 121, and 135.
   - Volume 3, Chapter 16, Prorated Time Authorizations.
   - Volume 3, Chapter 18, Operations Specifications.
   - Volume 10, Safety Assurance System Policy and Procedures.

B. Forms:
   - Aircraft Information Form.

C. Job Aids:
   - MCPD Work Instructions.
   - Schedule of Events (SOE).
   - Required Document List (RDL).
   - Request List.
   - Tabletop Scenario Worksheet.
   - Proving Flight Test Scenario Worksheet.

4-1671 ACTION.

A. Add Additional Aircraft of the Same Make and Model. When a certificate-holding district office (CHDO) receives notification from a certificate holder that they intend to add an additional aircraft to their certificate of the same make and model they currently operate, the following actions must be accomplished:

   1) When an operator takes delivery of a new aircraft from an aircraft manufacturer or leasing company, and the operator currently has the authorization to operate that particular make and model, the aircraft can be added to the operator’s OpSpec paragraph D085, provided that the operator complies with the following procedures:
a) The operator must have procedures in their manual of sufficient detail that would prevent it from operating the aircraft in revenue service before an aircraft conformity evaluation is accomplished.

b) The aircraft is on the operator’s maintenance program or manufacturer’s program (part 135, nine passengers or less) for that particular make and model.

2) An operator can then operate the aircraft in accordance with part 91 flight rules to a base where an aircraft conformity evaluation will be accomplished.

NOTE: Operations under part 121 or 135 may require additional inspections, tests, or the installation of additional instruments and/or equipment before operating in revenue service. If the certificate holder intends to obtain a previously operated aircraft (used) and place it on their certificate, the CHDO and the operator must follow the procedure contained in Order 8130.2 for special flight permits (SFP).

3) Principal inspectors (PI) should ensure that the operator’s maintenance program has policy and procedures that aircraft/equipment to be added to an operating certificate conforms to its type design and operational rules.

NOTE: Volume 10, Chapter 6, Section 3 provides an extensive checklist of items for aircraft configuration. Provided as guidance for inspectors assigned to air carriers under part 121, inspectors with oversight for part 135 operators should adapt the list to the applicable rules of part 135.

4) PIs should ensure that an air carrier adding an aircraft to an operator’s OpSpecs has established procedures for bridging aircraft onto its certificate (see Volume 3, Chapter 16).

NOTE: When the CHDO determines that an aircraft can be added on a certificate holder’s OpSpec paragraph D085 they must also consider, if applicable, OpSpec paragraph D092. Additionally, the aircraft must be added to the SAS database.

B. Add New Make and Model. When a CHDO receives notification from a certificate holder of their intent to add a new make and model (type) aircraft to an existing certificate holder’s OpSpecs, the CHDO manager should first determine if they need technical assistance from AFS-900. When making this determination, the manager should consider if the ASIs assigned to the project have satisfactorily completed air carrier indoctrination training, have the necessary experience as an air carrier inspector or cabin safety inspector (CSI), and have experience with the type of aircraft proposed for addition to the operator’s OpSpecs.

1) If they do or do not need assistance from AFS-900, CHDO personnel should follow the guidance provided in Volume 10, Chapter 7 and the MCPD.

2) The design of the MCPD guides the activities of ASIs and part 121 certificate holders during the addition of a new aircraft make and model to a certificate holder’s
OpSpecs. In this document, we use the verbiage and/or wording “certificate holder” and “operator” interchangeably. The MCPD can be accessed at www.faa.gov/about/initiatives/atos/.

3) The MCPD uses a structured system safety-based approach to assess the design and performance of the certificate holders’ proposed changes. The basis of this approach is on reviewing the air carrier’s revised policies and procedures as an integrated whole rather than two separate parts. It incorporates SAS guidance, as explained in Volume 10, that follows the general process for approval or acceptance as described in Volume 3, Chapter 1 and its basis is the regulatory requirements of 14 CFR part 119, §§ 119.51(c)(1) through 119.51(c)(4). This process can be tailored to suit any project; however, there will be no modification or deletion of regulatory requirements and requirements based on FAA policy without permission from the Office of the Director, AFS-1.

a) There are five phases that make up the MCPD:
   - Phase 1—Initial Inquiry.
   - Phase 2—Application.
   - Phase 3—Design Assessment.
   - Phase 4—Performance Assessment.
   - Phase 5—Administrative Functions.

b) The MCPD includes steps that require actions for an AFS-900 certification section team leader to perform. The AFS-900 certification section team leader function will only be appropriate when the process, by request of the CHDO manager, includes AFS-900.

4) If the CHDO needs assistance from AFS-900, the CHDO manager should notify AFS-900 via email. This notification should include the following minimum information:
   - The name of the air carrier,
   - The location of the air carrier’s principal base of operations,
   - The kind(s) of change(s) to the operation,
   - The type of airplane(s), and
   - The proposed date for implementation.

5) Although the addition of a new aircraft make and model to an operator’s OpSpecs is not an initial certification event, the MCPD process includes many of the steps and forms used for initial certification. Operators may access procedures and forms used in the initial certification process on http://www.faa.gov/aircraft/air_cert/.

NOTE: When the CHDO determines that an aircraft can be added on a certificate holder’s OpSpec paragraph D085, it must also consider (if applicable) OpSpec paragraph D092. Additionally, the aircraft must be added to the SAS database.

C. Conformity Inspection Requirements. Aircraft conformity is the responsibility of the operator. ASIs should ensure that the operator has a maintenance and inspection program that includes policy and procedures in enough detail to ascertain conformity of the aircraft for the type of operation to be conducted.
NOTE: When surveillance requirements exist due to system safety principles, ASIs should accomplish an aircraft conformity evaluation in accordance with this guidance, handbook chapters, and applicable regulations. For example, a new aircraft conformity maintenance and inspection program developed by the operator would require surveillance the first time the operator uses the program, whereas an established maintenance and inspection program would require surveillance on an as-required basis, determined by system safety risk factors. As a reference, the inspector will see Figure 4-86, Request List (Including 14 CFR Parts 91 and 135 Requirements), for the review of required documents.

**Figure 4-86. Request List (Including 14 CFR Parts 91 and 135 Requirements)**

<table>
<thead>
<tr>
<th>Request List</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copy of airline’s inspection document (conformity inspection).</td>
</tr>
<tr>
<td>A copy of bridging (transfer) document and Continuous Airworthiness Maintenance Program (CAMP) for the aircraft, including work cards and time limits, etc. (May be in electronic format.)</td>
</tr>
<tr>
<td>The Maintenance Review Board (MRB) and Maintenance Planning Document (MPD) (manufacturer’s recommended maintenance program) for the aircraft.</td>
</tr>
<tr>
<td>List of Passenger Accommodations (LOPA) for the interior. Additional diagrams that might include location of emergency equipment, if not on LOPA.</td>
</tr>
<tr>
<td>Passenger briefing cards.</td>
</tr>
<tr>
<td>The current type certification standard equipment list.</td>
</tr>
<tr>
<td>The FAA will also ensure the operator has the aircraft in its tracking system (forecast, next check due, etc.).</td>
</tr>
<tr>
<td>Flight deck checklists.</td>
</tr>
<tr>
<td>Burn certifications for aircraft interior materials (14 CFR part 25, § 25.853).</td>
</tr>
<tr>
<td>Skin mapping (repairs) and repair assessment if applicable (14 CFR part 121, § 121.1101; 14 CFR part 135, § 135.169(b)(4); and part 135 appendix A).</td>
</tr>
<tr>
<td>Aircraft Flight Manual (AFM) or company manual used in lieu of the AFM, if applicable (14 CFR part 91, § 91.9 and part 121 § 121.141).</td>
</tr>
<tr>
<td>Minimum equipment list (MEL).</td>
</tr>
<tr>
<td>Pilot aircraft operating manual (§§ 121.135 and 135.21).</td>
</tr>
<tr>
<td>Engineering Orders (EO) accomplished.</td>
</tr>
<tr>
<td>Placard diagram and/or manual.</td>
</tr>
<tr>
<td>Records required by §§ 121.380, 121.707, and 135.439.</td>
</tr>
<tr>
<td>In-flight manual (flight attendant (F/A) manual) (§§ 121.135 and 135.21).</td>
</tr>
<tr>
<td>Technical documents that firmly establish the digital flight data recorder (DFDR) parameter types and accuracies, and the latest DFDR data download, if available.</td>
</tr>
<tr>
<td>All Supplemental Type Certificates (STC) for the aircraft.</td>
</tr>
</tbody>
</table>
4-1672 TASK OUTCOMES.

A. Complete the PTRS Record.

B. Follow SAS Guidance Modules 4 and 5.

C. Complete the Task. Successful completion of this task will result in issuance of OpSpec D085.

D. Document the Task. File all supporting paperwork in the operator’s/program manager’s office file.

4-1673 FUTURE ACTIVITIES. Normal surveillance.

RESERVED. Paragraphs 4-1674 through 4-1688.
6-293 REPORTING SYSTEM(S).

A. Program Tracking and Reporting Subsystem (PTRS). For Title 14 of the Code of Federal Regulations (14 CFR) part 91 subpart K (part 91K), use the following activity codes.

1) **Spot Inspection**: 3628, 5628.

2) **Structural Spot Inspection**: 3647, 5647.

B. Safety Assurance System (SAS). For 14 CFR parts 121 and 135, use SAS automation to develop a Custom Data Collection Tool (CDCT).

6-294 OBJECTIVE. This section provides guidance for observing and analyzing in-progress maintenance operations for compliance with specific methods, techniques, and practices in the program manager/operator’s inspection and maintenance programs.

6-295 GENERAL.

A. Definition. A work package is job task control units developed by the program manager/operator for performing maintenance/inspections. A typical work package may include the following:

- Component change sheets;
- Inspection work cards;
- Nonroutine work cards;
- Appropriate sections of the maintenance procedures manual; and
- Engineering Change Orders (EO).

B. Federal Aviation Administration (FAA) Inspection Personnel. It is important that Airworthiness aviation safety inspectors (ASI) are familiar with the type of aircraft to be inspected before performing the inspection. This can be accomplished through on-the-job training (OJT).

C. Coordination Requirements.

1) Airworthiness ASIs possess various degrees and types of expertise and experience. An ASI who needs additional information or guidance should coordinate with personnel experienced in that particular specialty.

2) For parts 121 and 135, follow SAS guidance for Modules 2 and 3 to request geographic inspector resources.
6-296 INITIATION AND PLANNING.

A. Initiation. Part 91K spot inspections can be scheduled as part of the work program, but may be initiated whenever a problem is noted, including deficiencies noted during other types of inspections. Part 121/135 inspections should be scheduled per SAS guidance.

B. Planning.

1) Spot Inspections Derived From the Planned Work Program or From SAS.

a) The number of part 91K spot inspections in the work program depends on the type and number of program manager/operator aircraft. After determining the type of aircraft to be inspected, confirm the aircraft availability and scheduled maintenance functions with program manager/operator personnel.

b) If the maintenance to be observed is known, review the program manager/operator’s maintenance procedures manual to become more familiar with the maintenance task. Review the following:

- Required Inspection Items (RII), if applicable;
- Forms used to document the maintenance task;
- Latest manual revision and date;
- Special tools and equipment used to perform the maintenance task; and
- Any other manual requirements relating to the maintenance task.

c) For geographic requests, in which the maintenance procedures manuals are not in the office, review the applicable sections of the program manager/operator’s maintenance manual at the facility prior to performing this task.

d) Examining previous inspection findings provides the ASI with background information regarding problem areas found during other spot inspections. This information can give an indication of how effective past corrective actions were in resolving previously identified problem areas.

e) The FAA provides information such as Airworthiness Directives (AD), Service Difficulty Report (SDR) summaries, maintenance bulletins, surveillance data, and PTRS entries. This information should be reviewed, when available, to become familiar with current service difficulty information. While performing the spot inspection, ensure that any conditions described in this information do not exist on the aircraft.

2) Spot Inspections Not Derived From the Planned Work Program. There are many situations while performing other surveillance activities that afford the opportunity to perform spot inspections. For example, if a discrepancy is found during the inspection that requires maintenance, a spot inspection of that maintenance function could be performed.
6-297 MAINTENANCE RECORDS. During performance of the spot inspection, special attention should be paid to the following areas, as applicable:

- AD’s current status, including the method of compliance;
- Overhaul records, including documentation containing the overhaul details and replacement time;
- Major repair/alteration classifications and the use of approved data; and
- Replacement time of life-limited parts.

6-298 PERFORMING THE SPOT INSPECTION.

A. Selecting a Maintenance Task.

1) Discuss with the maintenance supervisor what maintenance is currently being performed to determine what portions of that current maintenance/inspection should be observed.

2) Special emphasis should be placed on observing maintenance tasks that involve RII’s. Problem areas to look at include the following:

   - Persons performing inspections outside of their authorizations or limitations; and
   - RII’s not being properly identified or accomplished.

B. Performance Standards.

1) Each program manager/operator has a maintenance/inspection program for their individual maintenance operations. For maintenance to be performed on the program manager/operator’s aircraft, there must be corresponding provisions and procedures in the program manager/operator’s maintenance manual.

2) Each program manager/operator should have special procedures in the manual that ensure that persons outside of the organization perform maintenance in accordance with the program manager/operator’s maintenance manual.

C. Discrepancies Noted During Surveillance. When deviations from accepted procedures are noted, it must be brought to the attention of maintenance management that corrective action must be taken immediately. Discrepancies noted during the inspection may require followup at a later time.

6-299 STRUCTURAL SPOT INSPECTIONS.

A. Increased Surveillance. The Aging Airplane Safety Rule requires the FAA to validate the effectiveness of air carrier maintenance programs with regard to structural fatigue and corrosion. In response, the FAA uses the structural spot inspection to perform surveillance of transport category aircraft undergoing “C,” “D,” or similar “heavy inspections.” Inspectors should coordinate and time their inspection activities with the certificate holder maintenance process.
B. Inspection Area. During the observance of a “heavy inspection,” ASIs must pick an inspection area where maintenance has been started and where there could be possible fatigue or corrosion problems (especially an area that is not usually open to inspection, such as under the galley or lavatories).

1) If inspecting an area where maintenance is in progress, the following should be evaluated:
   a) While performing their job functions, are personnel accomplishing their job task per the work package?
   b) Does the Aging Aircraft/Corrosion Control program provide the necessary guidance to evaluate and respond in a timely manner to structural fatigue and corrosion?

2) If inspecting an area where maintenance has already been accomplished, the following should be evaluated:
   a) Are there any structural fatigue or corrosion problems evident?
   b) If there are, were they identified by the person(s) responsible for that area?
   c) If they were identified, was corrective action initiated and completed?

3) Is there an AD applicable to this problem? If there is an AD, what is the status of that AD?

NOTE: While inspecting these areas that are not normally accessible, look for evidence of structural major repairs. If a major repair was accomplished, review the approved data for that repair.

6-300 PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. Previous experience working with an operator/program manager with similar types of aircraft.

B. Coordination.

1) This task may require coordination between Avionics and Maintenance ASIs.

2) Geographic inspector(s) must coordinate with the certificate-holding district office (CHDO) to obtain knowledge of the operator’s maintenance procedures and any other items of concern that may surface during routine inspections.
6-301 REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions):

- Title 14 CFR Parts 39, 43, and 91K.
- Program Manager/Operator’s Maintenance Procedures Manual and Inspection Work Packages.

B. Forms. None.

C. Job Aids. None.

6-302 PROCEDURES.

A. Initiate Spot Inspection (as applicable).

B. Select Appropriate Aircraft for Inspection. Determine the following from the program manager/operator’s maintenance schedules:

- Aircraft availability;
- Aircraft type; and
- Type of maintenance being performed.

C. Prepare for the Inspection. Review the following:

- Maintenance manual procedures for maintenance being performed (if available);
- Operations specifications (OpSpecs)/management specifications (MSpecs) time limitations, when applicable to the maintenance task;
- Previous inspection findings;
- Applicable maintenance alert bulletins;
- SDR summary at http://av-info.faa.gov/sdrx; and
- Any new regulation and/or AD requirements affecting the aircraft to be inspected.

NOTE: If preparing for an aging aircraft inspection, the ASI/Designated Airworthiness Representative (DAR)/Organization Designation Authorization (ODA) should select structural inspections, Corrosion Prevention and Control Programs (CPCP) tasks, or major repairs/modifications that are scheduled to be accomplished during this maintenance visit. If possible, supporting documentation for these tasks should be obtained before conducting the planned inspection.

D. Perform the Spot Inspection.

1) Identify the ASIs to the maintenance supervisor and discuss the nature of the inspection.

2) Discuss with the maintenance supervisor/person in charge the status of the selected maintenance task.
3) Select a particular maintenance task within the work package. If possible, include a maintenance task designated by the program manager/operator as an RII.

   a) Ensure that current maintenance procedures are available to the person(s) performing the work by accomplishing the following:

      • Asking maintenance personnel for the maintenance procedures used to accomplish the work; and
      • Recording the date of the maintenance procedures being used to perform the maintenance task for future comparison with the maintenance manual master copy.

   b) Ensure that the maintenance is performed according to established procedures by comparing actual performance to the program manager/operator’s approved maintenance/inspection manual procedures.

   c) Ensure the person performing maintenance is using the proper tools by accomplishing the following:

      • Observing that the person performing maintenance is using special tools referenced in the maintenance manual; and
      • Checking calibration due dates on precision tools, measuring devices, and testing equipment requiring calibration.

   d) Ensure that the program manager/operator has the facilities to properly perform the maintenance task.

   e) Ensure that systems being maintained are not exposed to environmental conditions that could contaminate or damage components.

   f) Ensure that the person performing maintenance accomplishes maintenance recording according to the operator’s recordkeeping system.

   g) Note any maintenance task deficiencies and include any copies of the documents that revealed the deficiencies.

   h) For those maintenance tasks involving RII functions, determine that the persons observed performing these functions are appropriately certificated, authorized, and qualified.

   NOTE: If performing an aging aircraft inspection, the ASI/DAR/ODA should focus the inspection on the specific structural areas, tasks, and major repairs/modifications identified during the aircraft records review and are scheduled to be accomplished during the maintenance visit.

E. Analyze the Findings. Evaluate inspection findings to determine if discrepancies exist. For part 91K, discuss the results with the program manager. For parts 121 and 135, follow SAS guidance for Module 5.
6-303  TASK OUTCOMES.

A. Complete the PTRS Record. For part 91K, when closing out a structural spot inspection, include the following information on FAA Form 8000-36, Program Tracking and Reporting System Data Sheet:

- The age of the aircraft;
- If the operator’s inspection includes aging aircraft-related activities; and
- The AD number, AD type, and inspection results, if an AD structural repair or modification was accomplished.

NOTE: If performing an aging aircraft inspection, enter “AGINGRIR” in the National Use block of Section I. Record aircraft times, cycles, inspection status, and other required data in the Comment block of Section IV.

B. Complete the Task. For part 91K, completion of this task can result in requested manual revisions.

C. Document the Task. For part 91K, file all supporting paperwork in the program manager/operator’s office file.

D. Follow SAS guidance. For parts 121 and 135, follow SAS guidance.

6-304  FUTURE ACTIVITIES. For part 91K, based on the analysis of inspection findings, plan increased surveillance of problem areas, as applicable. For parts 121 and 135, follow SAS guidance.

RESERVED. Paragraphs 6-305 through 6-319.
VOLUME 6 SURVEILLANCE

CHAPTER 2 PART 121, 135, AND 91 SUBPART K INSPECTIONS

Section 26 Safety Assurance System: Inspect Program Manager/Operator’s Maintenance Facility for Parts 91K, 121, and 135

6-738 REPORTING SYSTEM(S).


B. Safety Assurance System (SAS). For 14 CFR parts 121 and 135, use SAS automation. This section is related to SAS element 4.5.1 (AW), Maintenance Facility/Main Maintenance Base.

6-739 OBJECTIVE. This section provides guidance for inspecting a program manager/operator’s maintenance facility for regulatory compliance with parts 91K, 121, and 135.

6-740 GENERAL. The maintenance inspection is performed to ensure that adequate housing, equipment, spare parts, technical data, and qualified personnel are being used to satisfactorily complete all maintenance functions.

6-741 PREPARING FOR THE INSPECTION.

A. Equipment Identification. Inspectors should be aware of the type of aircraft being operated. The operations specifications (OpSpecs)/management specifications (MSpecs) will identify the type of aircraft authorized for use.

B. Facilities. Program managers/operators may have numerous maintenance facilities spread out geographically to support their operation. Typically, a program manager/operator will have a main maintenance base, submaintenance base(s), and line maintenance facilities. Each maintenance facility must be evaluated for its related work activities and inspected accordingly. The performance of assigned tasks must fall within the limitations and capabilities of the facility. All program manager/operator maintenance facilities are required to perform maintenance in accordance with the program manager/operator’s maintenance manuals. The inspector should use these documents to determine what special equipment, housing, and environmental conditions are necessary to perform the work.
6-742 PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites:

- Knowledge of the regulatory requirements of parts 91K, 121, and 135, as applicable;
- Successful completion of the Airworthiness Inspector Indoctrination course(s) or equivalent; and
- Familiarity with the type of operation being inspected.

B. Coordination:

- This task requires coordination between the assigned principal maintenance and avionics inspectors.
- If a line station facility is being inspected by the office with geographic responsibility, coordinate with the certificate-holding district office’s (CHDO) principal inspector (PI).

6-743 REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions):

- Title 14 CFR Parts 43, 65, 91K, 119, 121, and 135.
- Special Federal Aviation Regulation (SFAR) 36 or Organization Designation Authorization (ODA).
- Program manager/operator’s maintenance manual.
- Applicable OpSpecs/MSpecs.

B. Forms. None.

C. Job Aids. None.

6-744 PROCEDURES.

A. Review the Program Manager/Operator’s Data. Review the following:

1) The district office files to determine if any chronic or open items exist, history of Compliance Action, status of Enforcement Investigation Reports (EIR), exemptions, previous inspection reports, correspondence, and other documents, to determine if any areas identified require special attention.

2) The program manager/operator’s maintenance manuals to determine the level of maintenance accomplished and the complexity of operation at the maintenance facility.
3) The operator’s OpSpecs/MSpecs to determine the maintenance and inspection program content and complexity.

B. Inspect the Maintenance Organization. Ensure the following:

1) Staffing meets maintenance needs based on the complexity of the operation. One method to determine adequate staffing is to sample the operator’s deferred maintenance programs to determine if there are excessive deferral amounts and extensions, which could lead to inadequate staffing. Another method is to review the operator’s out-of-hangar performance Mechanical Interruption Summary (MIS) to determine if low staffing results in aircraft maintenance not being accomplished in the time allotted.

2) Responsibilities are separated between inspection and maintenance sections.

C. Inspect the Inspection Department. Ensure the following:

1) Designated staffing is adequate for the complexity of the operation.

2) Delegated staffing (Required Inspection Items (RII)) is at a reasonable level.

D. Inspect the Program Manager/Operator’s Maintenance Facilities. Using the program manager/operator’s manual as a reference, inspect the following:

1) Parts and storage areas, to ensure that:
   a) Parts personnel are adequately trained in the procedures pertaining to their job duties and responsibilities.
   b) Adequate spare parts are available to support the complexity of the operation.
   c) Receiving inspections are accomplished in accordance with the program manager/operator’s manual.
   d) Shelf life limits are established for program manager/operator-designated items, and that these items are controlled in accordance with the operator’s manual or the manufacturer’s recommendations.
   e) Components and hardware are properly identified, protected, stored, and classified as to serviceability.
   f) The program manager/operator can provide traceability of hardware, parts, and components subject to installation on type-certificated (TC) products.
   g) Segregation of serviceable and unserviceable components and hardware is maintained.
   h) The program manager/operator has a hazardous materials (hazmat) program covering areas such as recognition, packing segregation, storage, and shipping.
2) Special tools and test equipment, to ensure that:
   a) Serviceability and calibration is accomplished in accordance with the program manager/operator’s manual.
   b) All required items are serviceable and within calibration criteria, to include traceability to one of the following:
      - The National Institute of Standards and Technology (NIST);
      - Standards established by the item’s manufacturer; or
      - If foreign-manufactured, the standards of the country where manufactured, if approved by the Administrator.
   c) Appropriate types and quantities are available.
   d) Proper storage and protection is used.

3) Fuel/oil storage and dispensing facilities, if operated and maintained by operator (see Volume 6, Chapter 11, Section 21).

4) Deicing chemical storage and dispensing equipment, if applicable, to ensure (see Volume 6, Chapter 2, Section 15):
   a) Appropriate chemical storage and dispensing.
   b) Serviceability of equipment.
   c) Acceptable general condition and safety of storage areas.
   d) Appropriate identification of deicing/anti-icing fluid storage tanks, dispensing equipment, and transfer pumps and hoses.
   e) Training of personnel in program manager/operator’s deicing procedures.

NOTE: If deicing services are provided on a contract basis, ensure that the contractor meets the above requirements.

5) Support shops (avionics, sheet metal, engine, etc.), if applicable, to ensure:
   a) All required technical data is current and available.
   b) Staffing reflects complexity of the shop.
   c) Personnel are properly trained, qualified, and authorized. Training files may or may not be located at submaintenance facilities or line stations. When sampling training records, coordination with the facility that houses the training records may be warranted.
   d) Procedures for shift turnover are in place and properly used.
e) All required special tooling and equipment is available, serviceable, and within calibration criteria.

f) Maintenance tasks and inspection functions are being accomplished in accordance with the operator’s maintenance manual.

g) Safety equipment is available and serviceable.

h) Individual shop storage areas are maintained to the same standards as the main storage area.

i) Work areas do not conflict with each other (e.g., lathe is not next to avionics repair area).

j) Lighting, ventilation, and general housekeeping are adequate.

NOTE: When applying this section to line maintenance facilities, the inspector must determine which items apply based on the complexity of the facility. Some line stations may not necessarily have a dedicated hangar.

6) Hangar facilities, to ensure that:

- Facilities are adequate for the work being performed.
- Staffing reflects the complexity of work being performed.
- Personnel are properly trained, qualified, and authorized.
- Procedures for shift turnover are in place and properly used.
- Special equipment and tooling is available, serviceable, and calibrated, if applicable.
- Safety procedures are established and adhered to.
- Procedures direct the flow and control of all maintenance and inspection records.
- Lighting, ventilation, and general housekeeping are adequate.

7) Hangar ground support equipment, to ensure the equipment is serviceable and appropriate for the work being performed.

E. Inspect the Program Manager/Operator’s Technical Library. Ensure that all required technical data is available and current. If data is on microfiche, ensure that readers are available and serviceable. If the operator uses electronic publications, ensure that adequate procedures and controls exist for their generation and use (refer to AC 120-78). The data must include the following, as applicable:

- OpSpecs/MSpecs;
- Program manager/operator’s General Maintenance Manual (GMM);
- Aircraft manufacturers’ manuals;
- Propeller, appliance, engine, and emergency equipment manufacturer’s manuals;
- Manufacturer’s and vendor’s Service Bulletins (SB)/Service Letters (SL);
Applicable 14 CFR sections;
Applicable Airworthiness Directives (AD);
Applicable Type Certificate Data Sheets (TCDS)/Supplemental Type Certificates (STC); and
Aircraft Flight Manual (AFM).

F. **Inspect the Aircraft Maintenance Record System.** See Volume 6, Chapter 2, Section 36. Different program manager/operator maintenance facilities may or may not retain maintenance records at their location. Ensure the carrier has an adequate process for the transferring of maintenance records from submaintenance/line stations to facilities where records will be retained. If possible, sample the transfer process to ensure proper adherence to those procedures.

   NOTE: Randomly sample a representative number of open and completed work packages to ensure the effectiveness of the system.

G. **Inspect Aircraft.** Inspect any available aircraft to determine the quality of maintenance being performed. (See Volume 6, Chapter 2, Sections 4 and 6).

H. **Analyze Findings.** For part 91K, upon completion of inspection, record all deficiencies noted and determine the appropriate corrective action(s) to be taken. For parts 121/135, follow SAS guidance in Module 5.

6-745 **TASK OUTCOMES.**

A. **Complete the PTRS Record.** For part 91K, complete the PTRS record.

B. **Complete the SAS Record.** For parts 121/135, follow SAS guidance for Modules 4 and 5.

C. **Complete the Task.** Completion of this task for part 91K may result in any or all of the following:

   • A letter to the program manager/operator confirming results of the inspection;
   • Compliance or Enforcement actions per Volume 14, Chapter 1, as necessary;
   and/or
   • The filing of all supporting paperwork in the office file.

6-746 **FUTURE ACTIVITIES.** For part 91K, if deficiencies are noted during surveillance, schedule a followup inspection. For parts 121/135, follow SAS guidance.

**RESERVED.** Paragraphs 6-747 through 6-761.
VOLUME 6 SURVEILLANCE

CHAPTER 2  PART 121, 135, AND 91 SUBPART K INSPECTIONS

Section 27  Safety Assurance System: Conducting a Program Manager/Air Carrier/Air Agency Inspection to Detect Unapproved Parts

6-762 REPORTING SYSTEM(S).


B.  Safety Assurance System (SAS).  For 14 CFR part 121/135, use SAS automation. This section is related to SAS element 4.7.2 (AW), Aircraft Parts/Material Control.

6-763 PURPOSE.  This section provides guidance for principal inspectors (PI), aviation safety inspectors (ASI), and aviation safety technicians (AST) conducting unapproved parts surveillance/inspections at part 91K program manager, air carrier, and air agency facilities. This guidance will assist inspectors in performing a comprehensive inspection, including parts accepted into their system and parts approved for return to service by the program manager/air carrier/air agency. Consider information within Volume 14, Chapter 3, Section 3 that discusses false and misleading statements regarding aircraft products, parts, appliances, and materials.

6-764 DISCUSSION.  Principal maintenance inspectors (PMI), principal avionics inspectors (PAI), and ASIs will conduct surveillance to detect unapproved parts to ensure compliance with 14 CFR and policy outlined in the current edition of Federal Aviation Administration (FAA) Order 8120.16, Processing Reports of Suspected Unapproved Parts. A part is considered to be unapproved if it has been produced, maintained, rebuilt, or altered contrary to 14 CFR or if it has been intentionally misrepresented (i.e., false, fraudulent, and/or counterfeit). Specific definitions related to the Suspected Unapproved Parts (SUP) Program are contained in Order 8120.16 and are summarized below.

A.  Approved Part.  Describes a part that has been designed, produced, maintained, rebuilt, and/or altered in accordance with 14 CFR.

B.  Suspected Unapproved Parts (SUP).  A part that is suspected of not meeting the requirements of an approved part for any reason.

C.  Unapproved Part.  A part that does not meet the requirements of an approved part.

6-765 ACTION.  ASIs charged with certificate management responsibilities for air carriers and air agencies and management specification (MSpec) authorizations for part 91K program managers should ensure that those operators/program managers have procedures to prevent unapproved parts from entering into their parts inventories and/or prevent them from being released from their system.
A. Inventories. ASIs should evaluate their program manager/air carrier/air agency’s parts receiving inspection procedures to ensure that only approved parts and materials are accepted into inventories. A representative sample of the inventory should be examined to validate parts for the following, as applicable:

1) New parts (accepted into the system) were produced under 14 CFR part 21 or are otherwise approved by the Administrator.

2) Documentation identifies the approved manufacturer of that part/material and states that the part/material complies with the applicable regulations and contains the required information. Documentation may include:
   • FAA Form 8130-3, Authorized Release Certificate, Airworthiness Approval Tag;
   • Authorized Release Certificate European Aviation Safety Agency (EASA) Form 1;
   • Transport Canada (TC) Authorized Release Certificate – Form One;
   • Joint Aviation Authority (JAA) Form 1 (leave as is); and
   • Shipping tickets, packing slips, purchase orders, material certifications, and/or certificates of conformity.

3) FAA Parts Manufacturer Approval (PMA) parts are marked per 14 CFR part 45, § 45.15.


5) Standard parts (e.g., bolts and nuts) and raw materials (e.g., sheet metal and welding rods) contain certification statements or other evidence that they conform to established industry or U.S. Government specifications.

6) Used parts have an approval for return to service by an FAA-certificated person (e.g., air carrier, repair station, mechanic).

7) Parts with a specified replacement time, inspection interval, or related procedures are permanently marked with part number and serial number (or equivalent), per § 45.15 or § 45.16, or dispositioned in accordance with 14 CFR part 43, § 43.10.

NOTE: Refer to the current edition of Advisory Circular (AC) 20-62, Eligibility, Quality, and Identification of Aeronautical Replacement Parts, for additional information.

B. Maintenance Records/Work Orders. ASIs should review a representative sample of maintenance records and/or work orders of parts approved for return to service by the program manager/air carrier/air agency to ensure the following:

1) Approved parts were used during the course of maintenance, repair, or alteration.
2) The air carrier/air agency is authorized to approve the part for return to service. A part 91K program manager is not authorized to return parts to service.

3) The maintenance or alteration was performed in accordance with the methods, techniques, and practices prescribed in the current manufacturer’s maintenance manual; instructions for continued airworthiness (ICA) prepared by the manufacturer; or other methods, techniques, and practices acceptable to the Administrator; and/or the maintenance was performed in accordance with operations specifications (OpSpecs) or an inspection program accepted/approved by the Administrator.

4) Alterations were performed in accordance with approved data or data acceptable to the Administrator.

C. Air Agencies. ASIs should inspect the air agency’s maintenance records and/or work orders to verify the following:

1) The maintenance or alteration performed is authorized on a current capability list (CL) acceptable to the Administrator or on the approved OpSpecs.

2) The approved/acceptable data used to perform the maintenance or alteration was current at the time the part was approved for return to service.

3) The equipment, tools, and materials used are recommended by, or at least equivalent to those recommended by, the manufacturer and are acceptable to the Administrator for the part maintained, rebuilt, or altered and approved for return to service.

4) The maintenance, preventive maintenance, and/or alteration performed for an air carrier is performed in accordance with the air carrier’s maintenance program and applicable sections of its procedures manual or the operator’s approved inspection program.

5) The methods, techniques, and practices prescribed in the current manufacturer’s maintenance manual, ICAs prepared by its manufacturer, or other methods techniques and practices acceptable or approved by the Administrator are followed.

6) Personnel/training records are verified to ensure the facility has personnel with the appropriate training and qualifications, as applicable, to plan, supervise, perform, and approve for return to service the maintenance, preventive maintenance, or alterations performed.

7) When a maintenance function is contracted out, ensure the requirements of the air carrier’s accepted/approved maintenance procedures have been met.

NOTE: A part that was approved for return to service without meeting the requirements listed above is considered to be an unapproved part.

D. Fractional Program Managers/Air Carriers. ASIs should inspect the program manager/air carrier’s maintenance records and/or work orders to verify the following:
1) The maintenance or alteration performed is authorized by the OpSpecs/MSpecs or an inspection program accepted/approved by the Administrator.

2) The approved/acceptable data used to perform the maintenance or alteration was current at the time the part was approved for return to service.

3) The equipment, tools, and materials used are recommended by, or at least equivalent to those recommended by, the manufacturer and acceptable to the Administrator for the part maintained, rebuilt, or altered and approved for return to service.

4) The maintenance, preventive maintenance, and/or alteration performed by a program manager/air carrier is performed in accordance with the program manager/air carrier’s program and applicable sections of its maintenance manual or the program manager/operator’s accepted/approved inspection program.

5) Personnel/training records are verified to ensure the facility has personnel with the appropriate training and qualifications, as applicable, to plan, supervise, perform, and approve for return to service the maintenance, preventive maintenance or alterations performed.

6) When a maintenance function is contracted out, verify that the program manager/air carrier’s accepted/approved maintenance procedures were followed.

NOTE: A part that was approved for return to service without meeting the requirements listed above is considered to be an unapproved part.

6-766 COMPLIANCE ACTION. If a mistake is discovered that is honest or legitimate, and the person willingly corrects it, document the deviation as a Compliance Action per Volume 14, Chapter 1, Section 2. However, if the misleading character of the statement remains, or the mistake is one in a series of such mistakes, the FAA will presume knowledge on the part of the person and must report their findings of unapproved parts and/or SUP.

6-767 REPORTING FINDINGS OF UNAPPROVED PARTS AND/OR SUP. FAA personnel shall report findings of SUP and unapproved parts, as outlined in Order 8120.16. (Also refer to the current edition of AC 21-29, Detecting and Reporting Suspected Unapproved Parts.)

A. Reporting SUP Findings. Report findings of SUP to the Office of Accident Investigation (AAI) in one of the following ways:


2) For part 91K, in lieu of completing FAA Form 8120-11, forward a copy of the completed PTRS record, which identifies the necessary information.
B. **FAA Form 8120-11.** Report findings of unapproved parts to the AAI on FAA Form 8120-11 when it was determined that the part was produced or maintained contrary to 14 CFR or was intentionally misrepresented (i.e., false, fraudulent, and/or counterfeit). The form is available at http://www.faa.gov/forms. When reporting confirmed unapproved parts, include the following in block 9, “Description of the Issue”:

1) The part(s) identified herein were confirmed to be unapproved by the following means (describe why the parts do not meet the requirements).

2) Action taken to address this situation is as follows (describe what action the responsible party is taking to address the situation and what action the FAA is taking).

**6-768 RECORDING SYSTEMS.** ASIs are to complete inspections in accordance with the applicable guidance.

A. **Complete the PTRS Records.** For part 91K:

1) **PTRS Codes 3668/5668, Surveillance/Agency/Inspection/Unapproved Parts.** ASIs shall make a PTRS record entry to record the surveillance for each part 91K. Use PTRS codes 3668/5668 to record the inspection activity, along with the primary area, keyword, opinion code, and comments (as applicable). Record Compliance Action taken to correct unintentional deviations or mistakes as described in Volume 14, Chapter 1, Section 2.

2) **PTRS Codes 3775/5775, Investigation/Technical Support.** Use PTRS codes 3775/5775 to record activity associated with SUP investigations. Refer to Order 8120.16 for information regarding SUP investigations.

3) **PTRS Codes 3622/5622, Surveillance/Part 91K Program Manager/Air Carrier/Operators/Inspection/Unapproved Parts.** ASIs shall make a PTRS record entry to record the surveillance for each program manager. Use PTRS codes 3622/5622 to record the inspection activity, along with the primary area, keyword, opinion code, and comments (as applicable).

B. **Follow SAS Guidance Modules 4 and 5.** For part 121/135.

**RESERVED.** Paragraphs 6-769 through 6-781.
6-782 REPORTING SYSTEM(S).


B. Safety Assurance System (SAS). For 14 CFR parts 121 and 135 peer groups, use SAS automation. This section is related to all elements within aircraft technical operations of the SAS. This section may be used in conjunction with Custom Data Collection Tools (CDCT).

6-783 OBJECTIVE. This section provides guidance for ensuring that the program manager/operator’s total Continuous Airworthiness Maintenance Program (CAMP) includes the maintenance/inspection tasks necessary to maintain its aircraft in an airworthy condition.

6-784 GENERAL.

A. Definitions.

1) Scheduled Maintenance. A group of tasks accomplished at specified intervals that prevent deterioration of the safety and reliability levels of the aircraft.

2) Unscheduled Maintenance. A group of tasks resulting from scheduled maintenance, reports of malfunctions, and data analysis, used to restore equipment to acceptable safety and reliability levels.

3) Accountability. For the purposes of this job task, “accountability” refers to the procedures established by the program manager/operator to control the issuance and return of completed job cards, non-routine coupons/sheets, and other work forms issued during any maintenance/inspection function.

4) Work Packages. Work packages contain detailed instructions, standards, methods, and techniques for performing a task and may be presented as work forms, job cards, and/or other accepted methods. A work package satisfies accountability and recordkeeping requirements.

B. CAMP.

1) Operators operating under parts 121 and 135 (10 or more) and 14 CFR part 129, § 129.14 are required to have a CAMP. A program manager operating aircraft under 14 CFR part 91, § 91.1109(b)(5) may develop and maintain their aircraft under a CAMP. The total CAMP must be detailed in the program manager/operator’s manual system. The manual must
contain specific maintenance and inspection tasks, including methods, standards, and techniques for accomplishing these tasks.

2) There are additional programs required by the regulations, including training programs, Continuing Analysis and Surveillance Systems (CASS), recordkeeping and reporting systems, etc. These programs are an important part of the total CAMP and are used to support the maintenance tasks.

3) An approved CAMP establishes the program manager/operator as a maintenance entity, and when followed, ensures the continued airworthiness of an aircraft and its equipment.

C. Operations Specifications (OpSpecs)/Management Specifications (MSpecs). The scheduled maintenance program is derived from the approved requirements stated in the operator’s OpSpecs or the program manager’s MSpecs. The program manager/operator must have work forms, job cards, and/or other methods to accomplish the scheduled maintenance program and have manual procedures for implementing each special authorization.

NOTE: OpSpecs/MSpecs are considered to be as legally binding as the regulations themselves.

6-785 PERFORMING THE INSPECTION.

A. The Certificate-Holding District Office (CHDO). Since the program manager/operator is required to provide the appropriate manuals containing the CAMP to the CHDO, the majority of this task is performed there. At a minimum, the CHDO must be provided with the following:

- The General Maintenance Manual (GMM),
- Detailed instructions for accomplishing the scheduled maintenance/inspection program, and
- Aircraft manufacturer’s maintenance manuals incorporated by the program manager/operator, including the illustrated parts catalogue.

B. Maintenance Facility. The CHDO normally does not have, and is not required to have, all of the repair/overhaul manuals for engines, propellers, and appliances. The aviation safety inspector (ASI) must therefore go to the program manager/operator’s facility to ensure that the operator has the appropriate instructions and standards to accomplish its repair/overhaul maintenance functions.

C. Manual System. The program manager/operator’s manual system must define every facet of the CAMP, and should consist of the following:

1) GMM. The manual containing general information on how the program manager/operator conducts its business. These manuals contain the scheduled maintenance program instructions and requirements for a specific type of aircraft. The manuals must include provisions for accountability and for meeting the recording requirements of § 91.1439, part 121, § 121.380, and part 135, § 135.439, and may include the following:
• Instructions to accomplish scheduled checks (lettered, phased, numbered, etc.), including the job cards for accomplishing these checks, and
• Job cards for accomplishing recurring non-routine maintenance (i.e., engine change cards, propeller change cards).

2) Technical Manuals for Maintenance Standards and Methods. These manuals contain the standards for overhaul, repair, replacement, calibration, and other requirements to return the aircraft and its components to its original or properly altered condition. They consist of the current manufacturer’s maintenance/overhaul manuals and/or other standards developed by the program manager/operator and accepted by the Federal Aviation Administration (FAA).

D. Key Areas of the Maintenance Program.

1) Aircraft Inspection Requirements. This area includes routine inspections and tests performed on the aircraft at prescribed intervals.

   a) In the past, program managers/operators have been approved to use maintenance programs developed by program managers/operators with similar equipment but greatly different operational environments. To ensure that the aircraft is maintained properly, it is imperative that whatever combination of inspection intervals are used (calendar time, cycles, or hours), that the inspection is performed by whichever interval occurs first. This compensates for differences or changes in the program manager/operator’s operational environment.

   b) Those program managers/operators that do not have calendar time requirements must equate the current aircraft utilization in hours to a calendar date. For example, an operator has operated 3,000 hours in the past 12 months and has a 3,000 hour inspection interval. The inspection requirement should therefore be 3,000 hours or 12 months, whichever comes first.

2) Scheduled Maintenance. This area concerns maintenance tasks performed at prescribed intervals.

   a) Some scheduled maintenance tasks are accomplished concurrently with inspection tasks (i.e., Airworthiness Directive (AD) notes and Service Bulletins (SB)) that are a part of the inspection element and may be included on the same form. Scheduled tasks include such items as:

   • Replacement of life-limited items,
   • Replacement of components for periodic overhaul or repair,
   • Special inspection such as X-rays,
   • Checks or tests for on-condition items, and
   • Lubrication.

   b) Segmented Inspections and Built-in Inspection Tolerances (WINDOWS).

   1. Principal maintenance inspectors (PMI) assigned to program managers/operators that have a CAMP, during the course of normal surveillance, will review
their program manager/operator’s program to ensure that the inspection completion times average at or before the approved time/due date.

2. PMIs will ensure that the use of WINDOWS in their program manager or operators’ CAMP does not allow the accumulation of time resulting in an overall escalation in the inspection interval.

3. Program manager/operators/air carriers that are authorized short-term escalation will not be eligible for WINDOWS.

   NOTE: This guidance supersedes any other orders, memorandums, or letters on this subject.

c) Special work forms can be provided for accomplishing these tasks, or they can be specified by a work order or other document. Instructions and standards for accomplishing each task must be provided to ensure that the work is done in accordance with established procedures and is properly recorded.

d) Special emphasis should be placed on recordkeeping requirements of a scheduled maintenance program, since past inspections have found that the status of a scheduled maintenance activity was not supported by adequate records. This has caused considerable problems in determining the current status of life-limited parts, AD requirements, overhaul records, etc., since 14 CFR requires each operator to keep accurate maintenance records.

3) Unscheduled Maintenance. This area provides procedures, instructions, and standards to accomplish maintenance tasks generated by the inspection.

   a) A continuous aircraft maintenance record can be used for occurrences and the resulting corrective actions between scheduled inspections. Inspection discrepancy forms (non-routine coupons) process unscheduled maintenance tasks in conjunction with scheduled maintenance.

   b) Instructions and standards for unscheduled maintenance are provided in the operator’s technical manuals, consisting of the aircraft structural repair manual and manufacturer’s maintenance manuals for aircraft, engine, propeller, and appliances. These manuals are a part of the approved CAMP, and must be used when performing maintenance.

   c) When there is no technical information available and maintenance is required, the operator must develop or acquire the data needed to perform the maintenance. This maintenance data must be evaluated as major or minor, according to the operator’s procedures.

   d) Past inspections have revealed that procedures for determining major and minor repairs have been deficient, and that some repairs have been improperly categorized. As a result, major repairs have been performed without FAA-approved data. Special emphasis must be made by ASIs to ensure that operators properly classify repairs.
4) **Repair/Overhaul of Engine, Propeller, and Appliances.** This area concerns shop operations which, although they encompass scheduled and unscheduled tasks, are remote from the maintenance performed on the aircraft as a unit.

   a) Aircraft engine and propeller manuals containing instructions for installation, operation, servicing, and maintenance are accepted by the FAA. These manuals are accepted as part of type certification and are incorporated as part of the program manager/operator’s manual system. They require no further review by the FAA.

   b) The appliance manufacturer’s manual that the program manager/operator chooses to incorporate as a part of its maintenance manual is not formally approved. It is considered by the Administrator to be acceptable data for accomplishing major or minor repairs.

   c) If the airframe, engine, or propeller manufacturer’s instructions require special procedures, tolerances, or specifications, these instructions must prevail over the appliance manufacturer’s instructions.

   d) The FAA can formally issue supplemental information, including ADs, that supersede all manufacturer’s specifications.

5) **Structural Inspection/Airframe Overhaul.** Most of the information required to develop an initial structural inspection program will be developed by the manufacturer.

   a) The scheduled inspection program provides the framework for all the scheduled maintenance packages. Structural inspections are normally integrated throughout the operator’s scheduled maintenance program.

   b) The various levels of inspection must be clearly defined in the operator’s program. For example, the area under consideration may require a visual inspection during pre-flight, where a higher inspection such as “B” or “C” check may require more than a visual inspection of the same area. A comprehensive inspection or airframe overhaul is usually referred to as a “D” check, and may include all, or nearly all, of the scheduled tasks in a maintenance program.

6) **Structural Inspection Document Requirements.** When the program manager/operator has aircraft that are identified in a particular structural inspection document, the operator must incorporate these additional age-related structural inspections into its scheduled inspection program.

7) **Required Inspection Items (RII).** This area concerns maintenance work which, if improperly accomplished, could endanger the safe operation of the aircraft. RIIs appear in all elements of the operator’s CAMP. They receive the same consideration regardless of whether or not they are related to scheduled or unscheduled tasks. The fact that an RII requirement arises at an awkward time or inconvenient location has no bearing on the need to accomplish it properly.

   a) The program manager/operator must designate those items that need to be inspected, and must develop methods for performing the required inspections. The operator should consider the following when determining what tasks to designate as RIIs:
• Installation, rigging, and adjustments of flight controls and surfaces,
• Installation and repair of major structural components, and
• Installation of an aircraft engine, propeller or rotor, and the overhaul or calibration of certain components, such as engines, propellers, transmissions, and gearboxes, or navigational equipment, the failure of which would affect the safe operation of the aircraft.

b) It is the responsibility of the program manager/operator to evaluate the work program and identify RIIs in a suitable manner. The ASI must evaluate the proposed list of RIIs to determine if it is adequate.

c) RII findings consistently represent a major portion of an inspection. The following are examples of these findings:

• No specific training programs developed for RII personnel,
• No authorization list of RII inspectors,
• RIIs not accomplished,
• RIIs performed by unauthorized persons,
• Failure to comply with RII procedures,
• Contract personnel not properly trained/qualified/authorized,
• Lack of proper RII-designated items, and
• Failure to have countermand procedures.

E. Special Maintenance/Safety Considerations.

1) Fire Hazards. There exists, in transport category aircraft, a potential hazard consisting of fires in inaccessible areas of the aircraft and the resulting hazards to cabin occupants.

   a) During original certification of the aircraft, clean or uncontaminated material, such as insulation blankets, will not readily support combustion. However, after extended periods of service they have been found to be contaminated with lint, dirt, oily films, lubricant, fuel, and corrosion inhibitors that are conducive to ignition by low-intensity ignition sources. Low-intensity ignition sources can consist of the following:

      • Arc tracking of aircraft wiring and/or fluorescent light ballasts, and
      • Arcing light sockets and/or battery ground cables.

   b) It is recommended that each ASI review the operator’s CAMP to determine if an effective quality control procedure is in place that would discover these insulation breakdowns. In addition, ASIs should ensure that the program addresses the periodic inspection of aircraft wiring and the removal of contaminants, especially in inaccessible areas.

   c) ASIs should also be aware of the conditions associated with Kapton® insulation breakdown. Operators should be advised to exercise caution in exposing the aircraft wiring to the adverse conditions under which they have control, notably:
- Increased strain (tighter wire bends),
- Water, and
- Exposure to high pH content cleaning compounds.

2) **Emergency and Flotation Equipment.** Air carriers are not allowed to deviate from compliance with §§ 121.309(b)(1) and 135.421(a) and (b), pertaining to the regular inspection of emergency and flotation equipment. The frequency of inspection is the interval defined in the air carrier’s OpSpecs-controlled maintenance program. A part 91K program manager is required to have the instructions and procedures for the equipment in the inspection program.

   a) Specific guidance on frequency of inspection and life-limits are contained in the respective manufacturer’s maintenance manuals. Most life vest manufacturer’s manuals address the age issue of life preservers. The manuals state that if the vests are over 10 years old and cannot pass the leakage test or require repair or replacement parts, that they are non-repairable. If a particular operator is experiencing failure rates at periods shorter than 10 years, that operator’s inspection interval should be changed to adjust for certain environmental conditions or unique handling situations.

   b) ASIs should review their operator’s maintenance program to ensure the effectiveness of the inspection intervals for emergency and flotation equipment and to ensure regulatory compliance. The ASI should also review the operator’s failure rate to determine if an adjustment to the inspection interval should be considered.

3) **Changeover Procedures Audit.** ASIs should audit the oral and written changeover procedures between arriving and departing maintenance shifts, required by their applicable manuals, to ensure that the exact status of all phases of “maintenance in progress” is accurately transferred between shifts.

4) **Lightning/High Intensity Radiated Fields (L/HIRF) Protection Maintenance Program.** ASIs should ensure that an L/HIRF protection maintenance program is submitted to the CHDO. Operators of older generation aircraft with mainly analog electrical/electronic (non-digital) controls and displays must ensure that their maintenance programs include lightning inspection tasks. An integral part of this program is a developed sequence of inspections that are required in the event of exposure to lightning and/or HIRF environment, as well as maintenance/inspection due to aging and environmental degradation of aircraft or during heavy zone inspections. The program should address protection features such as structural shielding, insulation degradation, and electrical bonding integrity. The lightning and HIRF protection maintenance program should be prepared within the existing framework of maintenance activities such as the current edition of Advisory Circular (AC) 121-22, Maintenance Review Boards, Maintenance Type Boards, and OEM/TCH Recommended Maintenance Procedures. At a minimum this plan should:

   a) Identify aircraft flight critical systems and equipment, associated wiring, and locations on aircraft.
b) Identify aircraft systems and/or line replaceable units (LRU) that may be affected by exposure to L/HIRF, and whose proper operation is critical to the operation of the aircraft. Determine equipment locations within the aircraft and the routing of wiring between LRUs.

c) Determine if any of the critical systems and equipment are mounted outside the protective structure of the aircraft. The assurance program should provide information on assessing the protection level of these components and assemblies.

d) Identify specific lightning and HIRF protection features, including wire shields, connectors, bonding jumpers, structural shielding, and terminal protection devices.

e) The plan should identify and detail the type and frequency of inspections and maintenance. The plan should include requirements for test and inspection of electromagnetic protection installed within the equipment, if identified and required by the equipment manufacturer.

f) Identify items which rely on shield and connector bonding, sealing materials, ground jumpers, structural field foil liners, etc., for electromagnetic protection. Provide a program for evaluation and determination that proper protection is provided. Maintenance efforts should make sure that these items are properly identified to preclude the possibility of degradation or accidental removal during normal aircraft maintenance that could negate or eliminate the designed protection.

g) Identify devices which may degrade in time due to corrosion, fretting, flexing cycles or other causes.

h) The results of the tests made during the performance of the inspection program should be evaluated to ascertain if the maintenance program needs additions/deletions, escalation or reduction in inspection intervals, and the impact on scheduled/unscheduled maintenance programs.

6-786 PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites:

- Familiarity with the program manager/operator’s maintenance procedures manual and OpSpecs or MSpecs, and
- Familiarity with the type of aircraft being inspected.

B. Coordination. This task requires coordination between the assigned PMI, the principal avionics inspector (PAI), and FAA supervisory personnel.
REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions):

- Title 14 CFR Part 43, § 43.13(a) and (c).
- AC 120-16, Air Carrier Maintenance Programs.
- Maintenance Steering Group - 3rd Task Force (MSG-3) documents.
- Part D OpSpecs or MSpecs.

B. Related Reading Material (current editions). A comprehensive discussion of issues relating to lightning and HIRF environment can be found in the following:

- AC 20-155, Industry Documents to Support Aircraft Lightning Protection Certification.
- AC 20-136, Aircraft Electrical and Electronic System Lightning Protection.
- RTCA DO-160, Environmental Conditions and Test Procedures for Airborne Equipment.

C. Forms. None.

D. Job Aids. None.

PROCEDURES.

A. Review the Program Manager/Operator’s OpSpecs or MSpecs. Determine the applicable maintenance program requirements.

B. Review the Program Manager/Operator’s Manual System. Ensure that the manual system includes procedures for accomplishing the following:

1) Aircraft Inspection Requirements.

   a) Ensure that the maintenance manual contains detailed instructions for accomplishing required inspections and checks.

   b) Compare a scheduled check (lettered, phased, numbered, etc.) work package to the OpSpecs or MSpecs inspection requirements to ensure that all items are included and are scheduled at the appropriate inspection intervals.

   c) Sample items identified for inspection/check and ensure that the work packages have been developed to accomplish these items. The work packages must be appropriate to the identified maintenance process, e.g., visual inspections, detailed inspections, functional checks.
NOTE: A “C” check work package is preferred due to its size and complexity.

d) Ensure that work packages include provisions for the accountability and recording of these inspection tasks.

e) Ensure that there are provisions for accountability and recording of non-routine maintenance resulting from the findings of the scheduled inspection.

2) Scheduled Maintenance Requirements.

a) Sample items requiring scheduled maintenance to ensure the following:

- Work forms, job cards, and other methods have been developed, and
- Work forms, cards, and/or methods provide detailed instructions and standards for performing the scheduled maintenance (i.e., servicing/lubrication tasks, restoration tasks, replacement of parts or components with hard-time limitations).

NOTE: When performing a sampling review of a revision to the maintenance instructions, job cards/tasks, lubrication change, etc., if there is any doubt as to the soundness of the request, the ASI should coordinate the request with the appropriate Aircraft Certification Office (ACO).

b) Ensure that there are provisions for the accountability and recording of the following:

- Scheduled maintenance tasks, and
- Non-routine maintenance resulting from the scheduled maintenance.

3) Unscheduled Maintenance Requirements.

a) Ensure that the program manager/operator has procedures, instructions, and standards to accomplish maintenance that results from inspection findings, operational malfunctions, abnormal operations (hard landings, lightning strikes, etc.) or other indications of the need for maintenance, such as corrective action from failure analysis.

b) Ensure that the program manager/operator has procedures for evaluating repair requirements to properly classify the repair as major or minor.

NOTE: All repairs categorized by the operator as major require FAA-approved repair data.

c) Ensure that the program manager/operator has provisions for accounting and recording all unscheduled maintenance activity, i.e., manual sections for handling unscheduled maintenance activity.
4) Repair and Overhaul of Engines, Propellers, and Appliances.

   a) Ensure that the program manager/operator has provided instructions and standards to accomplish repair and overhaul tasks for those items requiring repair and overhaul.

   b) Identify and select several aircraft components from the OpSpecs or MSpecs or controlling documents with overhaul requirements. These components will be used during the on-site inspection to ensure that the operator has repair/overhaul specifications available.

   c) Ensure that the operator has provisions for certifying and recording the work.

   d) Document those items selected for future on-site inspection.

5) Structural Inspection/Airframe Overhaul.

   a) Ensure that the program manager/operator has instructions and standards for performing structural inspections and airframe overhauls.

   b) Sample selected scheduled structural inspection/airframe overhaul items to ensure that work forms, job cards, and/or other methods are available for performing these tasks.

   c) Ensure that the program manager/operator has established provisions for accountability and recording of these tasks.

6) Structural Inspection Document Requirements (if applicable).

   a) Ensure that the program manager/operator has identified those aircraft required to be included in a structural inspection program. Compare the operator’s aircraft serial numbers with the serial numbers in the structural inspection document to ensure that all required aircraft are included.

   b) Ensure that the program manager/operator has instructions and standards for performing inspections on those aircraft subject to supplemental structural inspections as identified in the structural inspection document.

   c) Ensure that the program manager/operator has provisions for accounting and recording the work.

   d) Identify and document any aircraft not being maintained according to the Supplemental Structural Inspection Document (SSID) requirements.

7) RII Requirements. Ensure the following:

   a) The program manager/operator has designated those maintenance tasks requiring additional inspections (RII inspections).

   b) The program manager/operator has developed procedures to meet the certification, training, qualification, and authorization requirements for RII personnel.
c) The program manager/operator has procedures for ensuring the accomplishment of RII s.

d) The program manager/operator has procedures for the buy-back of items that failed the RII inspection and require re-inspection after additional corrective action.

e) The program manager/operator has procedures and standards for accepting or rejecting RII s.

f) The program manager/operator has procedures that prevent any person who performs an item of work from performing a RII inspection of that work.

g) The program manager/operator has procedures for ensuring that the persons performing RII inspections are under the control and supervision of the inspection unit.

h) The program manager/operator has procedures for ensuring a current list of RII inspectors is maintained, including all names, occupational titles, and inspections they are authorized to perform.

i) The program manager/operator has procedures to prevent any inspector’s decision regarding a required inspection from being countermanded. Exceptions include supervisory personnel of the inspection unit or a person at the level of administrative control that has overall responsibility for the management of the required inspection function and other maintenance.

j) The program manager/operator has shift-change procedures for RII s to include designating the individual responsible for briefing the arriving shift’s supervisors and personnel of the exact status of maintenance in progress. These procedures must also include accounting for the in-progress maintenance status in the operator’s work packages.

C. Significant Differences Between Flight Cycle and Flight Time Relationship Affecting Airplane Maintenance Programs. PMIs review existing and future maintenance requirements to verify their operators conform to the following:

1) A program manager/operator’s inspection or maintenance program must provide for timely detection of both flight time- and flight cycle-related deficiencies. Operators that have a flight hour maintenance program also must take into consideration flight cycle and calendar inspection and maintenance tasks.

2) For airplanes that accumulate numerous flight cycles (landing and pressurization) per flight hour, the maintenance or inspection program must cover all flight cycle-related items (systems and structure), and ensure that no adverse trend (high component removal rate or early fatigue cracking in primary structure) is occurring. If adverse trends are occurring, then a program change may be necessary. If early fatigue cracking is occurring, the PMI will consult with the FAA ACO before a program change is considered.

3) For airplanes that accumulate more flight hours per flight cycle, the inspection and maintenance program must consider all structures that are sensitive to gust and maneuvering
loads (wings and empennage). If a structure is experiencing fatigue cracking at current inspection intervals, then a program change may be necessary. If early fatigue cracking is occurring, the PMI will consult with the ACO before a program change is considered.

4) SSID programs are mandated by AD. The SSID inspection interval cannot be increased or decreased without FAA ACO approval.

5) Airplanes that are designed to damage tolerance requirements must have an FAA-approved Airworthiness Limitations Section (ALS) as part of the instructions for continued airworthiness (ICA). The inspections contained in the ALS cannot be increased or decreased without FAA ACO approval.

D. Perform the Inspection at the Program Manager/Operator’s Facility. From the components selected during the review of the repair/overhaul requirements, accomplish the following:

1) Ensure that the shop performing the repair/overhaul of these components has the overhaul manual available. Review this manual to ensure the following:

   • The manual is appropriate to the make and model of the components being repaired/overhauled,
   • The manual is part of the operator’s manual system,
   • The manual is current, and

   NOTE: For manufacturer’s manuals, contact the manufacturer to verify the date and contents of last revision.

   • Special tool/test equipment requirements are appropriate to the work being accomplished.

2) Ensure that the shops have the specialized tools/test equipment as required by the manuals.

3) Determine if personnel are properly trained to perform the maintenance by reviewing the training records. These records may be found in the shop or in other locations established by the operator.

4) Ensure that the program manager/operator’s procedures for approval for return to service and any other recordkeeping requirements are being followed.

   NOTE: If any discrepancies are noted in any of the above procedures, notify the appropriate supervisory/management personnel to initiate corrective action.

5) Ensure that the operator has procedures that designate the individual responsible for briefing the arriving shift’s supervisors and personnel of the exact status of maintenance in progress. These procedures must also include accounting for the in-progress maintenance status in the operator’s work packages.
E. **Coordinate the Findings.** Due to the seriousness of any finding from this job task, discuss any deficiencies with the appropriate FAA supervisory personnel to verify the inspection findings.

6-789 **TASK OUTCOMES.**

A. **Complete the PTRS Record.** For part 91K.

B. **Follow SAS Guidance for Modules 4 and 5.** For parts 121 and 135.

C. **Complete the Task.** Completion of this task may result in the following, as applicable:

   1) A follow-up letter informing the program manager of all inspection findings.
   2) Initiation of Compliance Action per Volume 14, Chapter 1.
   3) Information sharing, root cause analysis, corrective action development, and followup.

D. **Document the Task.** File all supporting paperwork in the operator’s office file.

6-790 **FUTURE ACTIVITIES.**

A. **Follow Up on Corrective Actions Taken by the Program Manager, as Applicable.** For part 91K

B. **Follow SAS Guidance.** For parts 121 and 135.

**RESERVED.** Paragraphs 6-791 through 6-805.
6-824 REPORTING SYSTEM(S).


B. Safety Assurance System (SAS). For 14 CFR part 121/135, use SAS automation. This section is related to SAS Element 1.1.3, (AW) CASS.

6-825 OBJECTIVE. This section provides guidance for monitoring a Continuing Analysis and Surveillance System (CASS) and for evaluating the overall effectiveness of the Continuous Airworthiness Maintenance Program (CAMP).

6-826 GENERAL.

A. Reliability Program. Some operators with approved reliability programs use the reliability program to fulfill the monitoring mechanical performance functions requirement of its CASS. Since both reliability programs and CASSs require data collection, data analysis, and corrective action requirements, a duplication of operational data would occur. A part 91K program manager may develop and use a reliability program; however, there is no means for approval at this time.

B. Monitoring Mechanical Performance. Not all the elements of the current edition of Advisory Circular (AC) 120-17, Maintenance Control by Reliability Methods, are required to be contained in a CASS for monitoring mechanical performance. AC 120-17 does not provide for the audit function of CASSs.

6-827 INITIATION AND PLANNING.

A. Initiation. For part 91K, this task is scheduled as part of the work program. Additional inspections are initiated by national, regional, or district office special requirements. When given this assignment, the inspector must review current 14 CFR requirements and Federal Aviation Administration (FAA) policy. For part 121/135 follow SAS guidance for Module 3.

B. Planning.

1) Program Requirements.

   a) The program must contain a system that determines the effectiveness of the maintenance and inspection programs, and provides for timely corrective action of any deficiencies in the maintenance/inspection programs. This system must be identified in a chapter of the operator’s maintenance manual and must reference part 91, § 91.1431, part 91K, part 121, § 121.373, and/or part 135, § 135.431.
b) Any portions of the program not contained in this chapter of the manual must be referenced to their exact location. For example, an approved reliability program must be referenced in the program if it is used to fulfill the mechanical monitoring function of the program.

2) **Operator Size.** The complexity and sophistication of the program should be relative to the operator’s operation. A small operator should not be expected to have a program suitable for a large operator; however, all programs must have, as a minimum, monitoring mechanical performance and audit functions. Procedures for administering these two functions must be identified in the operator’s manual.

3) **Monitor Mechanical Performance Function.** This function must provide for collecting and analyzing operational data. The intent here is to identify deficiencies that require corrective action. This monitoring is done through emergency response, day-to-day monitoring, and long-term monitoring.

   a) Emergency Responding. Emergency responding includes identifying emergency/critical situations, determining causes, and formulating a plan to ensure that similar conditions do not exist in like equipment. Typical examples of emergency/critical situations include:

   - In-flight engine separations;
   - In-flight propeller separations;
   - Uncontained engine failures;
   - Critical structural failures; and
   - Any life-limited part failure.

   b) Day-to-Day Monitoring. Normally, large operators conduct daily meetings to discuss morning launch delays and activities of the previous day. Smaller operators conduct these meetings at less frequent intervals. Items typically discussed include:

   - Daily mechanical problems of each aircraft;
   - Non-availability of spare parts;
   - Inadequate manpower to perform maintenance;
   - Deferred maintenance items—excessive numbers and time;
   - Safety-related failures;
   - Recurring maintenance problems;
   - Excessive unscheduled maintenance;
   - Maintenance delays/cancellations; and
   - Scheduled inspection results, including sufficient time to complete the check, unusual/critical findings, recurring problems, and parts/equipment/manpower availability.

   c) Long-Term Monitoring. This system should include charting or some appropriate means of reporting and accounting operational data at specified intervals to reveal
trend-related information. Typical examples of operational data used by the operator to monitor mechanical performance are:

- Pilot reports compiled by the Airlines for America (A4A) code;
- Inspection findings compiled by the A4A code;
- Failure rates compiled by the A4A code;
- Tear-down reports;
- Premature removal rates (includes engines);
- Engine shutdown rates;
- Confirmed failure rates;
- Deferred minimum equipment list (MEL) items; and
- Service Difficulty Reports (SDR).

4) Audit Functions.

a) Auditing is normally an on-the-scene observation and should be a scheduled, ongoing activity encompassing periodic audits of contract agencies. The audit also addresses adequacy of equipment and facilities, storage and protection of parts, competency of mechanics, and housekeeping.

b) To be effective, audits should be separate from the maintenance organization. If audits are assigned to organizational units with other duties, the audit should be accomplished as an independent activity. Under no conditions may an organizational unit perform an audit on itself. Typical audit functions ensure that:

- All publications and work forms are current and readily available to the user;
- Maintenance is performed according to the methods, standards, and techniques specified in the operator’s manuals;
- Maintenance forms are screened for completeness, proper entries, and Required Inspection Items (RII) identification;
- Major repairs/alterations are properly classified and accomplished with approved data;
- Records of all applicable Airworthiness Directives (AD) contain current status and method of compliance;
- Airworthiness releases are executed by designated persons and according to procedures specified in the operator’s manuals;
- Records reveal current status of life-limited parts;
- The training program syllabus is being followed;
- Carryover items and deferred maintenance are properly handled; and
- Vendors are properly authorized, qualified, staffed, and equipped to do the contractor function according to the operator’s manual.

5) Use of Contractors. When the operator contracts with another operator and/or repair station for maintenance support, the operator is still responsible for Continuing Analysis and Surveillance (CAS) requirements. The responsibility for administering or controlling a
CASS can never be contracted out. However, contract organizations may be used to collect operational data, make analyses and recommendations, perform audits, and report information to be used by the operator in identifying deficiencies and implementing corrective action.

6) Scheduling Inspection. For part 91K, this inspection will normally be coordinated verbally with responsible persons of the operator. If responsible persons are not available on the agreed-upon date, reschedule the inspection with the operator and notify the operator in writing to confirm the date. For part 121/135, follow SAS guidance for Module 3.

6-828 PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites:
   - Knowledge of the regulatory requirements of parts 91K, 121, and 135;
   - Successful completion of the Airworthiness Inspector Indoctrination course for General Aviation (GA) and Air Carrier Inspections, or previous equivalent; and
   - Previous experience working with an operator required to have a CASS.

B. Coordination. This task requires coordination between the principal inspectors (PI) assigned to the operator. Safety issues, deviations from standards, and noncompliance may require interdependent coordination with local, regional, and headquarters (HQ) personnel, depending on the severity and complexity of the issues.

6-829 REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions):
   - AC 120-16, Air Carrier Maintenance Programs.
   - AC 120-17, Maintenance Control by Reliability Methods.

B. Forms. None.

C. Job Aids. None.

6-830 PROCEDURES.

A. Review Office Files. Review the historical data of the program to include the following:
   - The PTRS history of past inspections (may be applicable to 121/135);
   - The PTRS history of Compliance Actions;
   - The Enforcement Information System (EIS);
   - The previous 6 months’ Mechanical Interruption Summaries (MIS);
   - SDRs at http://av-info.faa.gov/sdrx;
   - Engine Utilization Reports (EUR);
• Any other operational data that might indicate negative trends in the maintenance/inspection program; and
• Surveillance history 121/135 using SAS automation or the Safety Performance Analysis System (SPAS).

B. Collect Items to be Used During Inspection. Note and collect the following:

1) Samples of any negative trends in the previous 6 months’ MISs and EURs.

2) Negative trends on the operator’s aircraft fleets (query the SDR database at http://av-info.faa.gov/sdrx for this information).

3) Samples of negative trends in operational data that the operator identified in previous reports.

4) Reports of all emergency/critical situations during the previous 12 months.

5) Samples of records from the day-to-day monitoring meetings in which corrective actions were deemed necessary.

6) Negative trends in the maintenance/inspection program noted during routine surveillance that the CASS had not detected. Examples of situations indicating negative trends include increases in the following:

- Aircraft delays;
- Premature removal rates;
- The number of engine shutdown rates;
- Number of short-term escalations;
- Deferred maintenance MEL items and length of time items remain deferred; and
- Repeat pilot reports.

C. Review the Program Manager’s/Operator’s Manual. Before making the onsite inspection, obtain the operator’s maintenance procedures manual and review the CASS. It is vital that the inspector obtain precise knowledge of the program manager’s/operator’s programs, concepts, and how the program is administered. While reviewing the manual to ensure that it complies with 14 CFR and before making the inspection, note any unclear areas, obvious omissions, or apparent discrepancies.

1) Review the program manager’s/operator’s program as described in the manual. Ensure that it contains policies and procedures for determining the effectiveness of the maintenance/inspection program and for corrective action of any deficiencies in those programs as required by § 91.1431, § 121.373, or § 135.431.

2) Ensure that the manual contains procedures for administering the CASS that are clear and easy to understand.
3) Ensure that the operator’s manual describes a systematic method of reviewing operational data. It should determine the effectiveness of the maintenance/inspection program through:

- Emergency responding;
- Day-to-day monitoring; and
- Long-term monitoring.

a) Emergency responding. The manual must include procedures for responding to critical and/or emergency safety-related situations. Review the manual procedures to ensure:

- Critical/emergency situations are defined;
- Procedures exist for the notification/coordination process;
- Procedures exist for determining if similar situations exist on other aircraft;
- Procedures exist to ensure that the operator implements corrective action; and
- Procedures define how the operator notifies the FAA.

b) Day-to-day monitoring. Ensure that the manual contains procedures for conducting periodic meetings with required personnel to discuss mechanical performance and identify the need for corrective action. Procedures must include:

- What items to discuss;
- When to conduct meetings;
- Who attends meetings; and
- How records of these meetings are forwarded to the FAA.

c) Long-term monitoring: data collection. Determine how the operator is monitoring the mechanical performance function of the program. This monitoring should include, at a minimum:

- What operational data the operator is using;
- What forms are used to collect the data;
- Who is responsible for compiling the data; and
- When and how often the data is collected.

d) Long-term monitoring: data analysis. Ensure that the manual has procedures for analyzing operational data. The procedures must include:

- When the analysis is to be performed;
- Who is responsible for performing the initial analysis;
- What conditions, based on performance standards, warrant corrective action; and
- Who is responsible for performing further analysis and making a corrective action recommendation.
4) Ensure that the manual has procedures for taking corrective action based on the data analysis. The procedures must describe:

- Who has responsibility for implementing corrective action;
- When the corrective action will be implemented; and
- How the corrective action will be phased into the maintenance program.

NOTE: Some program managers/operators fulfill this long-term monitoring function through their approved reliability programs.

5) Ensure that the program manager’s/operator’s manual contains audit functions. Review the manual.

a) The procedures must provide a continuous audit of the total maintenance program, including contract agencies. The procedures must state:

- Who is responsible for performing audits (normally, an independent agency that is assigned to the quality assurance (QA)/quality inspection department);
- What is being audited (e.g., manuals, maintenance, record entries, RIIs, training, airworthiness releases, deferred maintenance, vendors, etc.);
- When the audits are performed;
- How the audits are documented; and
- How records are retained.

b) Procedures for analyzing audit functions must include the following:

- Analyzing each audit to identify deficiencies;
- Initiating corrective action for each deficiency;
- Providing for on-the-spot corrective action, if appropriate;
- Providing for further analysis to determine system breakdown;
- Establishing qualifications of persons performing analysis; and
- Recording audit findings and subsequent actions.

c) Procedures must contain corrective action, to include:

- Timely implementation of corrective action from the data analysis; and
- Followup to determine effectiveness of the corrective action.

D. Document Findings of Review Prior to Onsite Inspection. For part 91K document preliminary findings found during the office and manual review. Discuss them with the PI/supervisor. Along with the PI/supervisor, indicate those inspection findings that must be brought to the attention of the program manager/operator during the initial meeting. These findings will be used in determining the overall effectiveness of the program. For part 121/135, follow SAS guidance for Module 4.
E. **Schedule the Inspection.** For part 91K, schedule the inspection with the program manager. Coordinate the inspection with the operator to determine when the operator’s personnel will be available and agree upon a time for the inspection. Arrange to attend a periodic meeting. For part 121/135, follow SAS guidance for Module 3.

F. **Meet With the Program Manager/Operator.** Contact the person who has overall responsibility for the program and discuss:

- The nature and scope of the inspection;
- Negative trends discovered during manual and office review; and
- Organizational elements responsible for administering the program, including identifying personnel.

G. **Verify Currency of Program Manager’s/Operator’s Manual.** Ensure that the organizational person responsible for the CASS has the current manuals. This can be done by comparing the effective dates or revision dates of the manual master copy held by the operator with the manual held by the responsible person.

H. **Determine if Staffing Equals that Described in the Program Manager’s/Operator’s Manual.** Compare the current organization to the organization described in the manual. Document any differences in staffing. These differences will be used in the final analysis in determining the effectiveness of the CASS.

I. **Ensure the Manual is Readily Available to Personnel.** Determine whether each organizational element responsible for administering the program has a current copy of the manual available.

J. **Inspect Program Manager/Operator System to Monitor Mechanical Performance.** During the inspection, document and photocopy any instances in which the operator did not follow the procedures identified in the manual by inspecting the following areas:

1) **Emergency Responding.** Using the previous year’s reports of emergency actions gathered during the office review, determine whether:

- Manual procedures were followed to ensure that similar situations did or did not exist on other aircraft;
- Fault analysis was accomplished for each situation; and
- Any corrective action established was implemented and effective.

2) **Day-to-Day Monitoring.**

   a) Establish that periodic meetings are occurring as defined in the manual.

   b) Attend a periodic meeting to determine if daily mechanical problems are being discussed and if the appropriate personnel are attending.

   c) Using day-to-day monitoring records collected during office review, determine, when the need for corrective action was recognized, whether:
• The problem was assigned to appropriate personnel; and
• The plan for corrective action was established, implemented, and effective.

3) **Long-Term Monitoring.**

   a) **Data Collection.** Compare the manual procedures with the actual data collection. Ensure that the following is being accomplished according to the manual:

      • All operational data was collected and was entered on the appropriate forms;
      • The appropriate persons compiled the data; and
      • The data was collected at the specified times.

   b) **Data Analysis.** Determine if data analysis is being performed in accordance with manual procedures by comparing the manual procedures to actual performance. Ensure that:

      • Operational data was analyzed to identify items exceeding performance standards, indicating negative trends;
      • These items were further analyzed to identify cause by using the sample of negative trends reported by the operator and collected during the planning of the inspection;
      • Trained, competent, and qualified personnel performed initial and further analysis;
      • Audit functions are accomplished when analysis has identified the need; and
      • The need for corrective action was determined.

   c) **Corrective Action.** Use the same sample of the negative trends used in the data analysis to ensure that the operator established and implemented a corrective action plan (CAP) for those items requiring corrective action. Continue to follow those items through the corrective action process.

      • Determine if the plan required changes to the maintenance/inspection program;
      • Ensure that these changes were implemented; and
      • Review operational data to ensure that the corrective action was effective in reversing the negative trend.

   d) **Documentation.** For part 91K, document all findings indicating that the operator did not follow its manual procedures. These findings will be used in determining the overall effectiveness of the CASS. For part 121/135, follow SAS guidance for Module 4.

K. **Inspect the Program Manager’s/Operator’s System to Audit the Maintenance Program.** Document and photocopy any instances in which the operator did not follow the procedures identified in the manual. Contact the responsible person identified in the manual to determine what audits the operator accomplished in the past 12 months.
1) **Inspection.** Inspect audit functions by accomplishing the following:

- Sample a cross-section of audit requirements identified in the manual and have the operator provide records of audit completion;
- Review the audit completion records to determine scope and detail of inspection;
- Verify results of audit by performing spot check of the audited facility;
- Verify that audits were performed within specified time periods;
- Determine whether persons who performed the audits have experience and expertise in the areas audited;
- Determine whether audit functions triggered by analysis are accomplished; and
- Discuss any other areas of concern found during surveillance that was not noted through the audit system.

2) **Analyze Audit Findings.** Determine if the operator has performed analysis of audits. Using samples collected from audit records provided by the program manager/operator, determine the following: (For part 121/135 follow SAS guidance for Module 5.)

- Analysis of each audit was accomplished to identify deficiencies;
- On-the-spot and system corrective actions were implemented to correct deficiencies; and
- Personnel performing audit had necessary experience and expertise.

3) **Corrective Action.** Using the same samples:

- Determine if the operator has implemented corrective action;
- Perform an onsite inspection to ensure the timely implementation of the corrective action; and
- Determine the effectiveness of corrective action by ensuring that similar deficiencies no longer exist.

4) **Documentation.** For part 91K, document all findings indicating that the operator did not follow the manual procedures. The inspector will use these findings in determining the overall effectiveness of the program. For part 121/135 follow SAS guidance for Module 4.

   L. **Follow Up on Negative Trends Identified During Office and Manual Review.**

   For part 121/135 follow SAS guidance for Module 5.

   - Contact the person responsible for the negative trend.
   - Determine whether the trend was significant.
   - Determine why the program did not identify the trend.
   - Ensure that corrective action is initiated.
   - Document all findings.

1) **Determine Effectiveness of the Program.** For part 91K, combine all inspection findings from the following to determine program effectiveness, including:
• The office and manual review;
• Onsite inspection; and
• Inspector-identified trends.

2) For Part 121/135, Follow SAS Guidance for Module 5.

M. Coordination. For part 91K, after assessing the program and before debriefing the operator, consult with the appropriate FAA supervisory personnel to determine which, if any, findings require official notification. For part 121/135 follow SAS guidance for Module 5.

N. Debrief. For part 121/135, follow SAS guidance for Module 5. For part 91K, notify the program manager. In the program manager’s debriefing:

• Discuss results of the inspection;
• Discuss all discrepancies discovered during the inspection;
• Discuss possible corrective action;
• Inform the operator that official written notification of findings will follow; and
• Inform the operator that they must submit a plan for the timely completion of corrective action.

NOTE: Agree with the program manager upon time limits for the CAP during the debriefing. The inspector can negotiate with the operator over time limits later if mitigating circumstances arise.

6-831 TASK OUTCOMES.

A. Complete the PTRS Record. For part 91K and for all when Compliance Action is taken per Volume 14, Chapter 1, Section 2.

B. Follow SAS Guidance for Modules 4 and 5. For part 121/135.

C. Complete the Task. Successful completion of this task will result in a formal letter to the operator confirming the inspection findings.

D. Document the Task. File all supporting paperwork in the operator’s office file.

6-832 FUTURE ACTIVITIES. For part 91K, at the end of the time limit for corrective action, schedule a 6-month followup inspection in the areas of deficiency to determine the effectiveness of the operator’s corrective action. For part 121/135, follow SAS guidance.

RESERVED. Paragraphs 6-833 through 6-847.
VOLUME 6 SURVEILLANCE

CHAPTER 2 PART 121, 135, AND 91 SUBPART K INSPECTIONS

Section 31 Safety Assurance System: Inspect Approved Reliability Program

6-848 REPORTING SYSTEM(S). Safety Assurance System (SAS) automation. This section is related to SAS Element 1.1.4, (AW) Reliability Program.

6-849 OBJECTIVE. This section provides guidance for inspecting approved reliability programs. This inspection determines the air carrier’s continued compliance with operations specifications (OpSpecs), the approved reliability document, and the operator’s maintenance procedures manual. The inspection is intended to ensure that the reliability program is effectively controlling the maintenance program.

6-850 GENERAL.

A. Definitions.

1) Reliability Program. A method to realistically and responsibly relate operating experience to established maintenance controls.

2) Substantiating Data. Records identified in the approved reliability document as containing information required to support changes in a maintenance program.

3) Maintenance Program. A program that includes inspection, overhaul, replacement of parts, preventive maintenance, repair and restoration, alterations, maintenance processes/tasks, and any other function performed by the maintenance/inspection department.

B. Air Carrier Authority. An approved reliability program affords the air carrier the authority to revise maintenance in-service time limitations for overhauls, inspections, and checks of airframes, engines, propellers, components, appliances, and emergency equipment. The air carrier describes detailed procedures for revising these time limitations in its program, which is approved by the Federal Aviation Administration (FAA). FAA surveillance ensures that procedures are followed and are effective.

6-851 INSPECTOR RESPONSIBILITIES. The FAA principal inspector (PI) must be alert at all times for possible noncompliance with the approved procedures. If it is found that the air carrier has failed to follow approved procedures, appropriate action per Volume 14, Chapter 1 must be taken to cease the noncompliance, correct all deviations, and ensure future compliance. The inspector must notify the air carrier, in writing, that the procedures were not followed and indicate that the maintenance time limitations revisions are not acceptable.

6-852 COORDINATION REQUIREMENTS. This task requires coordination between the principal maintenance inspector (PMI) and the principal avionics inspectors (PAI) assigned to the operator. Interdependent coordination with local, regional, and headquarters (HQ) personnel may be required to resolve complex issues that involve a significant portion of the certificate holder’s fleet.

Vol 6 Ch 2 Sec 31
6-853 REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions):

- OpSpecs.
- Advisory Circular (AC) 120-17, Maintenance Control By Reliability Methods.
- Air carrier’s reliability program document.
- Air carrier’s reliability reports.
- Air carrier’s maintenance manual procedures.

B. Forms. None.

C. Job Aids. None.

6-854 PROCEDURES.

A. Review the OpSpecs. Review the OpSpec’s reliability program paragraphs to understand the scope, conditions, and limitations of the authorization. Ensure that the OpSpecs include all items controlled by the reliability program, to include the following:

- All aircraft;
- Engines;
- Systems; and
- Components.

B. Review the Reliability Document.

NOTE: It is recommended to develop a procedural flowchart to gain a better understanding of how the entire reliability program functions and how the systems interrelate. It should be used during onsite inspections of the reliability program.

1) Ensure that the reliability document is on file in the district office.

2) Ensure that the reliability document has procedures for obtaining FAA approval before changing any of the following:

- Performance standards;
- Data collection system;
- Data analysis system;
- Process(es)/task(s);
- Procedures/organization for administering the program;
- Alert-type programs to non-alert programs or vice versa; or
- Before adding or deleting aircraft or components/systems.

3) Ensure that the reliability document includes a glossary of significant terms.
4) Review the data collection system.
   a) Determine what operational data is used to measure the mechanical performance of the programs specified in the reliability document (aircraft, engines, appliances, systems and components, and/or structure). Examples include pilot reports, engine utilization, failure rates, shop findings, and structural inspection findings.
   b) Identify forms used to collect operational data.
   c) Determine who has responsibility for compiling the data and routing it to the responsible person for review.
   d) Determine how the air carrier ensures operational data is accurate and factual.

NOTE: If Engine Condition Monitoring (ECM) is part of the reliability program, ensure that the input data and analysis of the data are timely and meaningful.

5) Review the data analysis system.
   a) Determine who is responsible for analyzing trend-related information. Trend-related information is analyzed by comparing data to established performance standards.
   b) Determine the criteria for conducting further analysis.
   c) Determine who will conduct any further analysis for corrective action (i.e., quality control (QC) or engineering).

6) Review procedures for instituting corrective action.
   a) Ensure that the reliability document describes the criteria that require further analysis to determine causal factors.
   b) Ensure that the reliability document describes definitive conditions when corrective action will take place.
   c) Determine who implements corrective action.
   d) Ensure that time limits are set for completing corrective action and that there is a chain of authority for carrying out the corrective action.
   e) Determine if follow-up procedures exist to ensure that the corrective action was effective.

7) Review performance standards.
   a) Determine who is responsible for establishing or revising performance standards.
b) Ensure that the reliability document contains the methods used to establish and revise performance standards.

c) Determine what periodic review the air carrier has established to ensure that the performance standard remains realistic.

d) Review data display and report requirements.

e) Determine if the reliability document provides for data displays (e.g., forms, reports, and graphs) that summarize the previous month’s activities. The report must be in sufficient depth to enable the carrier or the recipient of the report to evaluate the effectiveness of the total maintenance program.

f) Determine whether the reliability document has procedures for reporting continuing over-alert conditions and the status of ongoing corrective action.

g) Review maintenance intervals and process/task change procedures.

h) Identify the organizational element responsible for approving changes to the maintenance program.

i) Ascertaining the criteria used to substantiate each revision.

j) Review the method of distributing and implementing changes to the maintenance program (e.g., job cards and shop manuals).

k) Review established escalation limitations.

l) Identify established procedures for changing the maintenance process/task.

8) Review reliability program revision procedures.

a) Ensure that there are procedures for program revisions and that items requiring formal FAA approval are clearly identified.

b) Review method of distributing changes to the reliability document.


D. Review the District Office Files.

1) Review any substantiating data to support all changes produced by the reliability program. Ensure that the changed procedures defined in the program are being followed.

2) Review previous inspection reports, correspondence, and other documents in the office files to determine if there are open items or if any areas were identified requiring special attention.
3) Check Compliance Action Program Tracking and Reporting Subsystem (PTRS) records and the Enforcement Information System (EIS) to determine if any areas require special attention.

E. **Review the Operator’s Reliability Reports.** This information may display the current fleet status, information about any system that has exceeded the performance standards, and any corrective action.

1) Ensure that the reliability report required by the document has been submitted to the FAA and reflects all aircraft, engines, systems, and components controlled by the program. Reports must specify the items exceeding established performance standards and the corrective action being taken.

2) Identify trends by reviewing reliability reports for the previous 6 months. Determine the effectiveness of the corrective actions. Highlight areas with decreasing reliability characteristics for followup during onsite inspection.

3) Review Mechanical Interruption Summary Reports (MISR), Mechanical Interruption Summaries (MIS), and Engine Utilization Reports if these reports are not included in the reliability document. Analyze reports for the previous six months to identify trends. Ensure that the reliability program has also identified these trends.

F. **Document Findings.** After reviewing all air carrier data, and before coordination, ensure that any confusing areas, obvious omissions, or apparent discrepancies are documented in SAS Module 4.

NOTE: The operator’s reliability document has been approved by the FAA as an effective means to control the Continuous Airworthiness Maintenance Program (CAMP). If the document is not in exact compliance with the current edition of AC 120-17 it should be noted. However, unless the reliability program can be proven to be ineffective in controlling the maintenance program, it should not be considered a discrepancy finding during the inspection.

G. **Contact the Operator to Schedule an Onsite Inspection.** Advise the operator of the scope of the inspection. Confirm the inspection date in writing to ensure that the operator’s personnel are available.

H. **Brief the Operator’s Personnel.** Advise personnel of the scope and detail of the inspection.

I. **Compare the Operator’s Documents and FAA Copies.** Compare operator’s OpSpecs and reliability document to the FAA copies to ensure that dates and revision numbers agree.

J. **Evaluate the Organization.** Compare the actual organizational structure and personnel duties and responsibilities with the requirements in the approved reliability document.
NOTE: Until all the elements of the reliability program are inspected, the effectiveness of the organization cannot be determined. Inspection findings may be a direct result of organizational problems (e.g., unqualified personnel or personnel not following procedures).

K. Evaluate the Effectiveness of the Reliability Program.

1) Data Collection System.

   a) Determine if the data collection system in the reliability document is used in day-to-day operations and if the data collected is accurate and useful for controlling the maintenance program.

   b) Ensure that all necessary data is being collected and reported on the forms identified in the reliability document.

   c) Ensure that data collection duties are carried out by the personnel identified in the reliability document.

   d) Ensure that data is being routed to the proper organizational element for review.

   e) Ensure that data is routed to the proper organizational element in a timely manner by comparing the operational data’s initiation dates, receipt dates, and final incorporation dates.

   f) Ensure that data accuracy by comparing original operational data documents to the information collected by the reliability program. Reliability programs collect different types of operational data, such as pilot reports by Airlines for America (A4A) chapter, component removal rates by A4A chapter, and engine shutdown rates.

   g) Ensure that the data is complete. Compare operational data documents with the required procedures in the maintenance manual or reliability document.

   h) Ensure that the data collected is relevant to the maintenance program and can accurately predict changes to, and determine effectiveness of, the maintenance program.

2) Analyzed Data.

   a) Review the items identified as exceeding performance standards and requiring analysis. Determine if the analysis of these items has been accomplished according to the reliability document.

   b) Check records to verify the required analysis was performed.

3) Corrective Action System. Corrective action is a result of the data analysis. Corrective actions usually are accomplished through product improvement, procedures improvement, time limitation revision, etc. Once authorized, the corrective action becomes mandatory.
a) Determine if an attempt was made to find the cause of all identified areas that exceeded performance standards. Review records to verify the attempt. Determine if the attempt was made by the appropriate personnel (e.g., powerplant problems assigned to propulsion engineering).

b) If a cause was not identified, determine if the procedures specified in the reliability document for this situation were followed.

c) If the cause was identified, determine if corrective action was initiated in accordance with the reliability document.

d) Ensure that the corrective action was performed through the chain of authority described in the reliability document.

e) Determine if the persons responsible for executing corrective actions were notified.

f) Determine if the time limits in the reliability document for the completing corrective action were met.

g) Determine if followup procedures outlined in the reliability document were followed to ensure that corrective actions taken were effective.

NOTE: A corrective action is considered effective if the out-of-limit condition is brought back to an acceptable level of performance.

4) **Performance Standards System.**

a) Examine a cross-section of performance standards revisions to ensure that they were accomplished according to the reliability document.

b) Determine if performance standards were revised by the personnel specified in the reliability document.

c) Check records to verify that performance standards are reviewed periodically.

d) Review data display. Identify possible performance standards that are not responsive or sensitive enough to reflect changes in actual performance. For example, a data display that shows almost no change could indicate that the performance standards are not sensitive or responsive.

5) **Data Display and Reports.**

a) Ensure that data displays and reports cited in the reliability report are being used.

b) Ensure that data displays and reports highlight systems that exceeded the established performance standards and include proposed corrective actions.
c) Determine whether continuing over-alert conditions are carried forward from previous reports and provide the status of ongoing corrective action.

6) Maintenance Intervals and Process/Task Changes. Review operator’s file of all maintenance program revisions. Select a representative sample to determine compliance with the revision section of the reliability document.

   a) Ensure that revisions were authorized by the organizational element identified in the reliability document.

   b) Ensure that all maintenance program revisions were based on the criteria in the reliability document and include the specified substantiating data.

   c) Determine if the air carrier exceeded the escalation limitations in the reliability document.

   d) Determine if all required changes to the maintenance program were distributed and implemented. Review documentation to determine if changes are distributed and implemented using methods in reliability document.

7) Reliability Program Revision System. Ensure that formal FAA approval was obtained before implementing changes to any of the following:

   • Performance standards;
   • Data collection system;
   • Data analysis system;
   • Process(es)/task(s);
   • Procedures/organization concerning program administration;
   • Alert-type programs to non-alert programs, or vice versa; or
   • Adding or deleting aircraft, components, or systems.

L. Review Records and Reports. Determine if records and reports are prepared and processed in accordance with the reliability document.

M. Evaluate Short-Term Escalation Program, if Authorized.

6-855 COMPLIANCE ACTION. See Volume 14, Chapter 1, Section 2 when necessary to correct deviations or resolve compliance issues.

6-856 TASK OUTCOMES. Follow SAS guidance for Modules 4 and 5.

6-857 FUTURE ACTIVITIES. Follow SAS guidance.

RESERVED. Paragraphs 6-858 through 6-871.
VOLUME 6 SURVEILLANCE
CHAPTER 2 PART 121, 135, AND 91 SUBPART K INSPECTIONS

Section 33 Safety Assurance System: Inspect 14 CFR Part 121/135 Contractual Reliability Program

6-901 REPORTING SYSTEM. Use Safety Assurance System (SAS) Automation. This section is related to SAS Element 1.1.4 (AW), Reliability Program.

6-902 OBJECTIVE. This section provides guidance for inspecting/reviewing a contractual reliability program operated under Title 14 of the Code of Federal Regulations (14 CFR) parts 121 and 135.

6-903 GENERAL.

A. Definitions.

1) Operator. An air carrier contracting with another air carrier for a maintenance program controlled by a reliability program.

2) Contractor. An operator contracting out an approved maintenance program controlled by a reliability program to another operator.

3) Substantiating Data. Those records that contain information identified in an approved reliability document required to support changes in a maintenance program.

4) Compatibility. Air carrier daily utilization being within 75 percent of the contractor’s.

B. Purpose. This inspection is meant to ensure that the contractor’s reliability program is effectively controlling the maintenance program. This inspection determines the operator’s continued compliance with the following:

- Contractual agreement,
- Operations specifications (OpSpecs),
- Reliability document, and
- Company’s maintenance procedures manuals.

C. Time Limitations. The contractor will have detailed procedures in its reliability document for revising required time limitations. A Federal Aviation Administration (FAA)-approved contracted approved reliability program allows the operator to revise these time limitations. These time limitations are for overhauls, inspections, and checks of the following:

- Airframes,
- Engines,
- Propellers,
D. Deviations from Approved Procedures. The principal maintenance inspectors (PMI) and principal avionics inspectors (PAI) must be alert at all times for possible noncompliance with the approved procedures. When findings show that the operator has failed to follow these procedures, the PI will follow the guidance contained within Volume 14, Chapter 1, Section 2. The PI must understand why the event took place and ensure the appropriate corrective action is established by the certificate holder to regain compliance and ensure compliance in the future.

E. FAA Review of Approved Reliability Document. It must be remembered that the contractor’s approved reliability document has been previously approved by the FAA. In this review, it should be noted if there are procedures or a lack of them required by the current edition of Advisory Circular (AC) 120-17, Maintenance Control by Reliability Methods. However, unless the program can be proven ineffective, it should not be considered a discrepancy during the inspection.

F. Manual Procedures for Reliability Program. For the contracted reliability program to be effective, the operator must have manual procedures for interfacing between both organizations. These procedures must provide a method for implementing the contractor’s reliability program.

6-904 PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. Experience with an operator operating on a reliability program.

B. Coordination. This task requires coordination between the PMIs and PAIs assigned to the operator and those assigned to the contractor. Additional coordination may be required with local, regional, and headquarters (HQ) personnel.

6-905 REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions):

- Volume 14, Chapter 1, Section 2, Flight Standards Service Compliance Action Decision Procedure.
- OpSpecs.
- AC 120-17, Maintenance Control by Reliability Methods.
- Contractual Agreement.
- Air Carrier Reliability Document.
- Air Carrier Reliability Reports.

B. Forms. None.

C. Job Aids. None.
A. Operator Data Review. Review the following.

1) Contractual agreement to ensure that:

   a) A copy of the contractual agreement is on file in the district office.
   
   b) The contract is current by comparing the date on the contract with the date on OpSpec D079.
   
   c) The contract provides for incorporating the operator’s data into the contractor’s fleet data for the purpose of reliability control.

2) Air carrier’s OpSpecs reliability paragraph to ensure that:

   a) The data reflects all aircraft, engines, systems, components, etc., controlled by the reliability program.
   
   b) Additional information includes reliability document title and approval date/revision data.
   
   c) All information shown on the OpSpecs is consistent with the contractual agreement on file in the district office.

3) Reliability document to ensure that:

   a) The reliability document is on file in the district office.
   
   b) The document name, date, and revision number agree with the OpSpecs and the contractual agreement.
   
   c) The program is consistent with FAA policies and procedures and AC 120-17.
   
   d) The reliability program provides a description and identifies the organizations responsible for the following essential systems:

      - Data collection and analysis,
      - Corrective action,
      - Performance standards,
      - Data display and reports,
      - Maintenance intervals and process/task changes, and
      - Program revision.

4) Operator’s company manual procedures to ensure that it includes:

   a) Procedures for collecting and submitting required data.
b) The name of the person or department responsible for collecting and submitting required data.

c) The name of the person responsible for ensuring that all required reports are received in accordance with the terms of the contract.

d) Procedures for reviewing analyzed data received from the contractor, including routine reports and those requiring immediate attention.

e) Procedures for implementing required changes to the maintenance program based on reliability program data analysis.

f) The name of the person responsible for implementing required changes to the maintenance program based on reliability program data analysis.

g) Procedures for ensuring that the contractor is notified following changes to the maintenance program.

h) Procedures for ensuring that the operator’s certificate-holding district office (CHDO) is notified of changes to the maintenance program.

5) District office files to determine reliability program history, to include:

- Records of correspondence,
- Previous inspections,
- Trends or problem areas, and
- Program revisions.

6) Air carrier’s reliability reports to determine if:

a) The reliability reports required by the document have been submitted to the FAA and reflect all aircraft, engines, systems, and components controlled by the program. Reports must specify the items exceeding established performance standards and the corrective action that the operator is taking.

b) The reliability reports for the previous 6 months identify trends. Highlight areas with decreasing reliability characteristics for follow up during onsite inspection.

7) Air carrier’s Mechanical Interruption Summary (MIS) and Engine Utilization Reports (EUR), if applicable.

B. Reliability Program Assessment. At this stage, combine and assess all the findings discovered during the review to get an overall picture of how well the reliability program controls the maintenance program.
1) Determine if there has been an increase in any of the following:

- Aircraft delays;
- Premature component removal rates;
- Engine shutdown rates;
- Inspection scheduling adjustment (e.g., short-term escalations);
- Deferred maintenance (minimum equipment list (MEL));
- Pilot reports; and
- Aircraft inspection findings.

2) If there is a problem with the reliability program based upon the inspection findings or any of the above circumstances:

   a) Determine if the deficiencies were a result of the organizational structure, lines of authority, staffing, personnel qualifications, or other problems related to the organization.

   b) Determine if deficiencies were due to incomplete or ineffective methods and/or procedures in the overall program.

   c) Compile all findings that are contrary to the approved reliability program.

   d) Compile all findings that are in compliance with the document but are still not producing satisfactory results.

3) After compiling all findings and before the air carrier debriefing, consult with the appropriate FAA supervisory personnel to determine which (if any) findings require actions to address safety issues or deviations.

4) If no significant findings are made, no further actions are necessary.

6-907 TASK OUTCOMES.

   A. Complete the Task. Follow SAS guidance for Modules 4 and 5.


   C. Compliance Action. See Volume 14, Chapter 1, Section 2 to address safety issues or deviations.

6-908 FUTURE ACTIVITIES. Follow SAS guidance.

RESERVED. Paragraphs 6-909 through 6-925.
VOLUME 6 SURVEILLANCE

CHAPTER 11 OTHER SURVEILLANCE

Section 14 Safety Assurance System: Conducting Records Reviews and Aircraft Inspections Mandated by the Aging Airplane Rules for Parts 121, 129 and 135

6-2486 REPORTING SYSTEM(S). For Title 14 of the Code of Federal Regulations (14 CFR) parts 121, 129, and 135, use Program Tracking and Reporting Subsystem (PTRS) Activity Codes 3634, 3647.

NOTE: This section is related to Safety Assurance System (SAS) Elements 4.2.1 (AW), Maintenance/Inspection Requirements, and 4.6.2 (AW), Maintenance Special Emphasis Programs, but not reported in SAS.

6-2487 OBJECTIVE. This section provides guidance on conducting aging airplane inspections and records reviews to accomplish the requirements of the Aging Airplane Safety Final Rule and the Aging Aircraft Safety Act of 1991 (the Act). The Act requires the administrator to make inspections and to review the maintenance and other records of certain aircraft to decide whether they are maintained in an Airworthy condition. To accomplish this, the maintenance aviation safety inspector (ASI) will conduct structural spot inspections and aircraft records surveillance, as deemed appropriate. The air carrier, to accomplish the required aircraft records reviews and inspections, may use Designated Airworthiness Representatives (DAR) and/or Organization Designation Authority (ODA).

NOTE: For the purpose of this function, “the Administrator” is defined as ASIs, DARs, ODAs, or other persons so designated to accomplish these inspections.

6-2488 GENERAL.

A. Basic Requirement. The basic requirement is to inspect each aircraft and review its records; however, a sampling of these tasks and records for each airplane along with routine surveillance of a certificate holder’s maintenance program will ensure that each airplane and its age-sensitive components are properly maintained. This guidance is applicable to each airplane operated under part 121 (except those airplanes operated solely within the state of Alaska); part 135 multiengine, in scheduled service (except those airplanes operated solely within the state of Alaska); and U.S.-registered, part 129 multiengine aircraft. Special coordinating instructions for aircraft operated under part 135 on-demand rules can be found in subparagraph 6-2493A. Aircraft and records inspections are reported in PTRS for all 14 CFR parts.

B. General.

1) Records Review. The ASI/DAR/ODA will review/sample the following records for each airplane described in subparagraph A above to ensure confidence that the carrier is maintaining adequate/reliable records:

   a) Total years in service.
b) Total flight hours of the airframe.

c) Total flight cycles of the airframe.

d) Date of last records review and inspection required by part 121, § 121.1105, part 129, § 129.105, and part 135, § 135.422.

e) Current status of life-limited parts of the airframe.

f) Time since last overhaul of all structural components required to be overhauled on a specific time basis.

g) Current inspection status of the airplane, including the time since the last inspection required by the inspection program under which the airplane is maintained.

h) Current status of the following, including method of compliance:

   - Airworthiness Directives (AD), and
   - Inspections and procedures required by § 121.1109 and § 129.109.

NOTE: The effective date of these rules is December 20, 2010.

i) A list of major structural alterations.

j) A report of major structural repairs and the current inspection status of those repairs.

2) Aircraft Inspections. The intent of the Act will be met by accomplishing structural spot inspections as outlined in Volume 6, Chapter 2, Section 6, Safety Assurance System: Conduct Spot Inspection of a Program Manager/Operator’s Aircraft.

3) Federal Aviation Administration (FAA) Inspection Personnel. It is important that ASIs are familiar with the type of aircraft and records system of the air carrier before performing these inspections. ASIs possess various degrees and types of experience. An ASI who needs additional information or guidance should coordinate with personnel experienced in that particular specialty. This can be accomplished through on-the-job (OJT) training provided by the office with responsibility for oversight of the air carrier the ASI will be inspecting.

4) Coordination Requirements.

   a) It is essential for certificate-holding district offices (CHDO)/certificate management offices (CMO) to coordinate with the operators and geographic inspectors to ensure that no unnecessary delays are incurred as a result of records reviews and aircraft inspections if inspections are to be accomplished using geographic ASIs.

   b) Geographic inspectors may be needed to assist the CHDO/CMO in performing these inspections/reviews. Coordination is required to transmit all inspection results and/or recommendations to the CHDO/CMO including a list of discrepancies found.
c) The CHDO/CMO will be responsible for notifying the certificate holder that the inspection/review has been completed.

6-2489 INITIAL NOTIFICATION AND PLANNING.

A. Initial Notification.

1) Sixty-Day Notification to the FAA. The rules require that the operators notify the FAA at least 60 days before the airplane and its records will be available for inspection and review. Operators should be encouraged to provide advanced planning schedules of aircraft undergoing heavy maintenance. Principal maintenance inspectors (PMI) should work closely with their operator during this period to address any issues that could delay the records review and inspection or prevent the airplane from returning to service as scheduled.

2) Unforeseen Scheduling Conflict. The rules provide for a 90-day extension to the seven-year interval for repetitive records reviews and aircraft inspections. Should an unforeseen operator scheduling conflict occur, the CHDO/CMO may approve an extension of up to 90 days, provided the operator presents written justification for the scheduling conflict. Electronic, facsimile, or other forms of notification may be accepted. Operators should be encouraged to provide ample time for the CHDO/CMO to respond to the extension request.

   NOTE: Extensions may only be approved for the seven-year repetitive inspection intervals. In all cases, the initial compliance threshold to the applicable rule must be met.

   NOTE: An extension can only be granted by the CHDO/CMO.

B. Heavy Maintenance Check. The Act states that the records reviews and inspections will be carried out as part of the operator’s heavy maintenance check. For the purpose of complying with this statute, a heavy maintenance check is defined as a “C” check or segment thereof, a “D” check or segment thereof, or other scheduled maintenance visits where structural inspections are accomplished.

C. Planning. The records review(s) can be, and usually will be, accomplished separately from the aircraft inspection. This is because many operators perform maintenance in one location while the records may be maintained in a different location. If the records review and aircraft inspection are conducted separately, the operator should provide a summary of any additional records entries at the time of the aircraft inspection, such as ADs accomplished and major repairs accomplished.

D. Records Reviews and Inspections. Records reviews and airplane inspections for parts 121, 129, and 135 scheduled operators will be similar.

1) Records Review.

   a) The operator may provide actual “hardcopies” of the records or summaries of compliance as per its approved recordkeeping program.
b) The ASI/DAR/ODA should plan to sample the records to verify accuracy.

2) Aircraft Inspection.

   a) Confirm the aircraft is available. Schedule the inspection when the aircraft has been sufficiently prepared for inspection (i.e., opened/cleaned).

   b) The ASI should be familiar with the aircraft type and inspection program the aircraft is maintained under.

   c) Based on the records review and the planned maintenance, the ASI/DAR/ODA should select several structural inspection items to sample, if practical. Included in the items selected for sampling should be job task cards that indicate the:

   - Task,
   - Method of compliance,
   - Tooling required, and
   - Required signoffs.

3) Air Carrier Notification. The CHDO/CMO must notify the operator that the records reviews and inspections are complete. Because the aircraft records reviews and/or inspections may be accomplished by different inspectors in different geographic locations, coordination of these efforts is essential. Final notification to the operator will be made by the CHDO/CMO.

### 6-2490 PREREQUISITES AND COORDINATION REQUIREMENTS.

**A. Prerequisites.** Familiarity with the aircraft type and inspection program the aircraft is maintained under.

**B. Coordination.** This task requires coordination between ASIs, DARs, and ODAs. It also requires coordination between CHDOs/CMOs and operators/geographic units.

### 6-2491 REFERENCES, FORMS, AND JOB AIDS.

**A. References (current editions):**

- FAA Order 8900.1, Volume 6, Surveillance,
  - Chapter 2, Parts 121, 135, and 91 Subpart K Inspections,
    - Section 6, Safety Assurance System: Conduct Spot Inspection of a Program Manager/Operator’s Aircraft,
    - Section 35, Safety Assurance System: Inspect Section 135.411(A)(1) Operator’s Maintenance Records, and
    - Section 36, Safety Assurance System: Inspect Parts 91K and 121/135 (10 or More) and Part 129 Operator’s Maintenance Records; and
  - Chapter 4, Part 129 Inspections: Monitor Maintenance Program for U.S.-Registered Aircraft Operated by a Foreign Operator Under Part 129.
B. Forms. None.

C. Job Aids. None.

6-2492 MAINTENANCE RECORDS REVIEW.

A. Receive the Records. The certificate holder will coordinate with the FAA to provide the location and the status of the records required by §§ 121.1105, 129.105, and 135.422. Volume 6, Chapter 2, Sections 6, 35, and 36, and Volume 6, Chapter 4 provide necessary guidance for evaluating the required air carrier maintenance records.

B. Conduct the Review. The ASI/DAR/ODA will review/sample the records identified in subparagraph 6-2488B1).

NOTE: The records review and airplane inspection may be carried out by different ASIs/DARs/ODAs in different locations. This will require coordination between the inspectors to ensure discrepancies, noted in either the records review or the airplane inspection, are investigated to ensure compliance with regulations.

6-2493 AIRCRAFT INSPECTIONS.

A. Plan the Inspection. The ASI will coordinate with the certificate holder as to the scope and extent of the planned inspection. Volume 6, Chapter 2, Section 6 provides necessary guidance for accomplishing structural spot inspections.

1) The ASI/DAR/ODA should select structural inspections, Corrosion Prevention and Control Programs tasks, or major repairs/modifications that are scheduled to be accomplished during this maintenance visit. If possible, supporting documentation for these tasks should be obtained before conducting the planned inspection.

2) While performing these inspections, every effort should be made to avoid interfering with, or inconveniencing, the planned/scheduled maintenance.

B. Observe Maintenance Tasks. Observe maintenance tasks to ensure that:

• Work instructions provide sufficient detail to accomplish the scope of the required maintenance task;
• Required tooling and materials are available and used; and
• Work is accomplished by properly trained and qualified personnel.

6-2494 TASK OUTCOMES.

A. Complete the PTRS Record. Complete the PTRS record to track the accomplishment of these inspections. Use activity code 3647 for the aircraft inspection and 3634 for the records review. Enter “AGINGRIR” in the “National Use” block of Section I. In Section IV, the “Comment” block, record airplane times, cycles, inspection status, and other required data.
B. For Part 121/135. Follow SAS guidance for Modules 4, Data Collection, and 5, Analysis, Assessment, Action.

C. Complete the Task. Successful completion of this task will result in the following:

1) The cognizant PMI will be notified of any significant findings.

2) ASIs, designees, or the operator will notify the cognizant PMI electronically or verbally upon completion of the records review or aircraft inspection so that no delay will be incurred in notifying the operator.

3) The PMI will notify the certificate holder of any findings through standard office procedures.

4) The PMI will notify the certificate holder that the records review and inspection have been accomplished for a specific airplane. This will be accomplished via electronic, facsimile, or other accepted forms of notification.

NOTE: Because records reviews and the structural spot inspections may be completed on different dates, therefore the date of notification to the operator of completion of the records and aircraft inspection will be used to determine the due date of the next required inspection.

5) If DAR/ODAs accomplished the records reviews and aircraft inspections, they shall submit a report to the CHDO/CMO indicating the aircraft inspected. This report may be provided directly from the DAR/ODA or from the operator. The information provided must include the following:

- Identification number of the aircraft,
- Total years in service,
- Total flight hours of the airframe, and
- Date of last records review and inspection required by the aging airplane rules.

6-2495 FUTURE ACTIVITIES. ASIs assigned to part 129 certificate holders will accomplish structural spot inspections and aircraft records surveillance, as required by the Act. For parts 121 and 135, follow SAS guidance.

RESERVED. Paragraphs 6-2496 through 6-2515.
Section 22  Safety Assurance System: Conduct Night Vision Imaging System Evaluation Inspection

6-2679 REPORTING SYSTEM(S).


B. Safety Assurance System (SAS). For part 135, use SAS automation. This section is related to SAS Elements 2.3.1, (OP) Appropriate Operational Equipment and 4.2.2, (AW) Maintenance/Inspection Schedule.

6-2680 OBJECTIVE. This section provides guidance for evaluating an operator’s Night Vision Imaging System (NVIS) to include night vision goggles (NVG) and maintenance documents for aircraft operated under 14 CFR parts 91, 133, 135, 137, and 141.

6-2681 GENERAL. Airworthiness inspectors will use the information outlined in the following paragraphs when evaluating parts 91, 133, 135, 137, and 141 operators’ maintenance practices for NVIS. NVIS includes: lighting, filtration, transparencies, head-mounted NVG, and ancillary equipment. This guidance does not apply to other night or low visual environment enhancement devices (i.e., Forward Looking Infrared (FLIR) and Enhanced Vision Systems (EVS)). Minimum equipment list (MEL) information is found in Master Minimum Equipment List (MMEL) Policy Letter (PL)-127, Night Vision Imaging Systems (NVIS), and Volume 4, Chapter 4, Minimum Equipment Lists (MEL) and Configuration Deviation Lists (CDL).

A. NVIS Installation. NVIS are approved for installation through the type certificate (TC) or Supplemental Type Certificate (STC) certification process. As part of the process, the Federal Aviation Administration (FAA) accepts instructions for continued airworthiness (ICA) for installed NVIS equipment. Some NVIS STCs have specific NVGs documented for use. However, they are not considered part of the approved installation. Aircraft modified for NVG operations must be configured as described in the NVIS STC, to include any engineering change orders or other supplemental data related to the NVIS modification.

NOTE: Field approvals are not authorized for NVIS aircraft modifications as described in Volume 4, Chapter 9, Section 1, Perform Field Approval of Major Repairs and Major Alterations. Visual flight rules (VFR) night approvals do not constitute NVIS certification. In addition, some aircraft may not be suitable for NVIS modification due to factors such as cockpit obstructions, inability of pilots to move their heads while wearing NVG, the inability of the cockpit to accommodate a pilot wearing a helmet, etc.
B. NVGs. It is important to recognize that NVGs are a part of the overall NVIS. The NVGs are appliances although they are not physically connected to the aircraft. NVGs that have been demonstrated to be compatible with the installed NVIS lighting system are identified in the flight manual supplement (FMS). NVIS ICAs do not include NVG maintenance documents. The NVG maintenance documents are provided by the NVG manufacturer or an FAA-certificated repair facility with approved repair specifications. NVGs used for civil operations must meet the minimum performance standards of Technical Standard Order (TSO)-C164, Night Vision Goggles, which include the RTCA, Inc. document RTCA/DO-275, Minimum Operational Performance Standards for Integrated Night Vision Imaging System Equipment.

6-2682 PROCEDURES.

A. Preparation. Prior to performing the NVIS inspection, it is important that the aviation safety inspector (ASI) is familiar with the following documents, if applicable to the operation/aircraft being inspected:

- STC limitations and conditions.
- Download NVIS-related FAA Form 337, Major Repair and Alteration (Airframe, Powerplant, Propeller, or Appliance), from the Electronic Document Retrieval System (EDRS) II database located in the Safety Performance Analysis System (SPAS) database.
- Applicable maintenance manuals, ICAs, and operators’ inspection programs.
- NVIS alteration documentation.
- Other alteration documentation that could affect NVIS compatibility.
- Original Equipment Manufacturer (OEM)-manufactured NVIS documentation.
- Flight manual (FM), FMS.
- OEM and STC holder Service Bulletins (SB).

B. Records Review. The inspector must verify that the documents collected in the preparation phase are the correct documents for the aircraft being inspected. Also, the inspector must verify if any modifications were accomplished after the installation of the NVIS STC. If modifications were performed after the NVIS STC, the inspector should ensure that the operator has documentation verifying that a compatibility evaluation was performed. Refer to the “Limitations and Conditions” section of the STC for the aircraft being inspected. NVIS STCs may have varying requirements.
1) Make arrangements for access to STC-related documentation. Request any engineering change orders or other supplemental data related to the NVIS alteration.

2) Review NVIS ICAs. Ensure the ICAs include the most current appendix changes if applicable.

3) Review current FM and/or FMS for NVIS checks, inspections, and operation.

4) Review the Master Drawing List to confirm applicability of the aircraft being inspected.

5) Review the operator’s aircraft maintenance or inspection program for NVIS ICAs and NVG maintenance documents or procedures.

6) Verify any subsequent aircraft modifications to the cockpit, cabin, or aircraft exterior, involving a light-emitting or light-reflecting device, were properly evaluated in accordance with the “Limitations and Conditions” section of the STC.

7) Review any alterations incorporated on the aircraft, both major and minor, that may have an adverse effect on NVIS compatibility.

8) Review Figure 6-110, Flight Standards Service Night Vision Imaging System Aircraft Inspection Job Aid.

9) Review applicable SBs. SBs are not regulatory unless the following situations apply:
   a) If an Airworthiness Directive (AD) incorporates by reference all or a portion of an SB;
   b) If the SB is part of the FAA-approved Airworthiness Limitations Section (ALS) of the manufacturer’s manual or the TC;
   c) If an FAA-approved inspection such as an Approved Aircraft Inspection Program (AAIP) or Continuous Airworthiness Maintenance Program (CAMP) incorporates SBs directly or by reference; or
   d) If the certificate holder’s OpSpecs list SBs as an additional maintenance requirement.

C. Aircraft Inspection. The inspector should not remove panels or disassemble the cockpit, cabin, interior, and/or exterior lighting. Visually inspect the aircraft NVIS lighting configuration against the STC drawings or the drawings specified in the ICA. During the visual inspection, verify the following:

- Instrument panel modification.
- Lower console modifications.
- Overhead panel modifications.
• Internal cockpit and cabin lighting sources (e.g., map lights, utility lights, and/or aft cabin ceiling lights).
• External lighting sources (e.g., position lights, strobe lights, and/or search lights).
• Installed equipment with light-emitting sources (e.g., medical equipment, infrared imaging systems, hoists, and/or telecommunication equipment).

NOTE: Carry-on equipment is not required to be depicted on the STC drawings.

D. Closure.

1) For part 135, the inspector should follow SAS guidance for Module 5.

2) For all other operators, the inspector will debrief the operator about discrepancies found during the NVIS inspection. The inspector must document all discrepancies found during the NVIS inspection in the comments section of the PTRS record. A PTRS entry must be created for each aircraft listed in OpSpec D093.

NOTE: The operator is responsible for ensuring all equipment installations after the NVIS STC modifications have been evaluated for NVIS compatibility.

3) Compliance Action. Follow the process contained in Volume 14, Chapter 1, Section 2 to identify and document the root cause(s) that led to any deviations from rules, standards, or procedures and the corrective action taken to resolve them. Follow up as required to validate the operator is in full compliance.

6-2683 NVIS/NVG, PERSONS PERFORMING MAINTENANCE, PREVENTIVE MAINTENANCE, RETURN TO SERVICE, AND AIRWORTHINESS APPROVAL TAGS.

A. Maintenance and Preventive Maintenance Documents.

1) Maintenance and preventive maintenance documents for NVIS-installed lighting should contain, at a minimum, one of the following documents or procedures adequate for NVIS maintenance.

• The ICAs that are accepted by the FAA and are provided by the TC or STC holder as part of its design approval,
• FAA-approved maintenance/inspection program containing NVIS procedures,
• FAA-approved NVIS repair specifications, or
• NVIS maintenance procedures developed by the operator and approved by the FAA.
2) NVG maintenance and preventive maintenance documents should contain, at a minimum, one of the following documents or procedures adequate for NVG maintenance.

- Maintenance/preventive maintenance procedures accepted by the FAA and containing, at minimum, the elements specified in RTCA/DO-275, section 5;
- FAA-approved maintenance/inspection program containing NVG maintenance procedures;
- FAA-approved NVG repair specifications; or
- The NVG manufacturers’ maintenance manual.

NOTE: Ensure the maintenance documents are applicable to the aircraft and equipment being inspected. For part 135 operators, the maintenance documents inspected must match the maintenance documents authorized in OpSpec D093 with current applicable revision level(s).

B. Persons Performing NVG Maintenance, Preventive Maintenance, and Return to Service. Maintenance, preventive maintenance, and return to service for NVGs produced under a Technical Standard Order Authorization (TSOA), or that meet the minimum operational performance standards of RTCA/DO-275, will be performed by persons authorized under 14 CFR part 43.

C. Airworthiness Approval Tags. As stated in the current edition of FAA Order 8130.21, Procedures for Completion and Use of the Authorized Release Certificate, FAA Form 8130-3, Airworthiness Approval Tag, “...persons...authorized by § 43.7(c), (d), and (e), may issue an FAA Form 8130-3 for approval for return to service of products and articles that have undergone maintenance, preventive maintenance, rebuilding, or alteration, provided the applicable recordkeeping requirements of §§ 43.9, 91.417, 91.421, 135.439, or 145.219 are met. The use of FAA Form 8130-3 for this purpose is optional, but the FAA recommends its use. This will help aviation authorities and the industry to ensure complete traceability and ease the movement of products and articles through the aviation system.”

1) An appropriately rated FAA-certificated repair station may issue/attach FAA Form 8130-3, Authorized Release Certificate, Airworthiness Approval Tag, to NVGs that are manufactured under a TSOA.

2) Products and articles not produced under an FAA production approval are not eligible to receive an FAA Form 8130-3. FAA Form 8130-3 does not constitute approval to install a product or article on a particular aircraft, aircraft engine, or propeller, as stated in FAA Order 8130.21. Therefore, FAA-certificated repair stations must not issue/attach FAA Form 8130-3 to NVGs that are not manufactured under a TSOA.

D. Assistance. ASIs who encounter any potential safety concerns during NVIS surveillance should contact the appropriate Aircraft Evaluation Group (AEG). The AEG serves as liaison between Flight Standards (AFS) and the Aircraft Certification Office (ACO).
6-2684 MEL CONSIDERATIONS.

- MMEL PL-127 is the only MMEL relief available for NVIS systems and equipment.
- If the operator has not incorporated MMEL PL-127, then confirm that the operator does not defer any inoperative NVIS equipment.

6-2685 DAYTIME AND NIGHTTIME READABILITY.

A. Daytime Readability Assessment. Confirm that the filtered instruments are readable under natural daylight conditions. Normal deterioration of markings and colors on instrument/equipment faces may cause difficulty in reading filtered instruments during daytime conditions.

B. Nighttime Readability Assessment.

1) Ensure the aircraft has ground power applied and is configured for NVIS operation as specified in the FM or the FMS for the NVIS system installed.

   NOTE: Have an operator, maintenance, or flightcrew personnel assist with this step.

2) Confirm the NVIS lighting is functioning as specified in the FMS.

3) Inspect cockpit for any potential NVIS incompatible lighting sources (e.g., unfiltered equipment/instruments, mirrors, and/or light leakage).

   NOTE: The ICAs may include information addressing NVIS aircraft incompatible lighting and requirements for cockpit lighting survey.

4) Ensure the aircraft is configured for night VFR flight while not using NVG (known as “Night Unaided Flight”). Confirm that instruments and equipment are lighted for nighttime operations.

   NOTE: Have an operator, maintenance, or flightcrew personnel assist with this step.

6-2686 ANALYZE FINDINGS.

A. Determination. For other than part 135, analyze each finding to determine if the discrepancies are the result of improper maintenance and/or missing or inadequate maintenance/inspection procedures. Ensure the operator completes necessary followup/corrective actions and notifies the inspector. Inspectors will follow up with operators within 30 days to ensure the corrective action has been accomplished and meets the requirements of the approved data. Document the results of the analysis and operator followup action in the PTRS. For part 135, follow SAS guidance for Module 5.
B. **Debrief the Operator.** Inform the Director of Maintenance (DOM), Director of Operations (DO), Chief Pilot, or his or her representative about the status of the inspection and discuss any discrepancies found. The ASI must notify the DOM, DO, Chief Pilot, or his or her representative in writing and in a timely manner. The operator should be given an opportunity to take corrective actions. The ASI must verify that all corrective actions taken were in accordance with the requirements of the operators’ maintenance program.

**6-2687 COORDINATION REQUIREMENTS.** This task is performed by Airworthiness ASIs. It may require coordination with Operations ASIs and/or region specialists.

**6-2688 REFERENCES, FORMS, AND JOB AIDS.**

A. **References (current editions):**

- Title 14 CFR part 91, § 91.205(h) and part 135, § 135.411.
- Advisory Circular (AC) 27-1, Certification of Normal Category Rotorcraft.
- AC 29-2, Certification of Transport Category Rotorcraft.
- Volume 4, Chapter 9, Section 1, Perform Field Approval of Major Repairs and Major Alterations.
- Volume 14, Chapter 1, Section 2, Flight Standards Service Compliance Action Decision Procedure.
- TSO-C164, Night Vision Goggles.

B. **Forms.** None.

C. **Job Aids.** Automated OpSpecs checklist, worksheets, and Figure 6-110.

**6-2689 TASK OUTCOMES.**

A. **Complete the PTRS Record.** The outcome should be entered into the PTRS in accordance with the PTRS Procedures Manual (PPM).

B. **Follow SAS Guidance.** Part 135 must also follow guidance for SAS Modules 4 and 5.
C. **Complete the Task.** Completion of this task may result in the following:

- Compliance Action per Volume 14, Chapter 1, Section 2 when analysis of the findings discloses improper maintenance.
- Written notification to the operator/program manager of the necessary changes to the manual when analysis of the findings discloses missing or inadequate maintenance/inspection procedures.
- Communication with the certificate-holding district office (CHDO)/certificate management unit (CMU) by the geographic unit finding discrepancies.

**6-2690 FUTURE ACTIVITIES.** For other than part 135, based on inspection findings, determine if increased surveillance, additional Compliance Action, other job tasks, and/or additional coordination between the CHDO/CMU and geographic units are required to regain compliance. Future activities for part 135 certificate holders will be determined by the SAS process.
Figure 6-110. Flight Standards Service Night Vision Imaging System Aircraft Inspection Job Aid

Purpose: This job aid provides guidance for inspecting Night Vision Imaging System (NVIS)-equipped aircraft, to assess the quality of maintenance, configuration control, and the degree of compliance with the operator’s maintenance procedures on in-service aircraft.

A. Procedural Guidance:

- Safety Alert for Operators (SAFO) 10022, Maintenance of Night Vision Imaging Systems (NVIS);
- Master Minimum Equipment List (MMEL) Policy Letter (PL)-127, Night Vision Imaging System (NVIS);
- Operations Specification (OpSpec) A050, Helicopter Night Vision Goggle Operations (HNVGO);
- OpSpec/MSpec D073, Approved Inspection Program;
- OpSpec/MSpec D085, Aircraft Listing;
- OpSpec D093, Helicopter Night Vision Goggle Operations (HNVGO) Maintenance Program; and

B. Program Tracking and Reporting Subsystem (PTRS) Activity Codes: 4634, 4651, 6634, and 6651.

Section 1—Preparation. Prior to performing the NVIS inspection, it is important that the aviation safety inspector (ASI) is familiar with the following documents:

- OpSpec A050.
- OpSpec D093.
- OpSpec/MSpec D095.
- Supplemental Type Certificates (STC) limitations and conditions.
- Download NVIS-related FAA Form 337, Major Repair and Alteration (Airframe, Powerplant, Propeller, or Appliance), from the Electronic Document Retrieval System (EDRS) II database located in the Safety Performance Analysis System (SPAS) database.
- Applicable maintenance manuals, instructions for continued airworthiness (ICA), and operators inspection programs.
- NVIS alteration documentation.
- Other alteration documentation that could affect NVIS compatibility.
- Original Equipment Manufacturer (OEM)-manufactured NVIS documentation.
- Flight manual (FM) and Flight Manual Supplement (FMS).
- OEM and STC holder Service Bulletins (SB).
### Section 2—Records Review.

<table>
<thead>
<tr>
<th>Item</th>
<th>Complete Yes/No, or Not Applicable</th>
<th>Task</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Maintenance/Inspection Programs</td>
<td></td>
<td>Review the operator maintenance/inspection program to determine if it includes NVIS ICA procedures. Ensure the program contains all the applicable data to maintain the NVIS-modified aircraft (e.g., configuration drawings and/or ICA with appendices).</td>
</tr>
<tr>
<td>2</td>
<td>NVIS FM/FMS</td>
<td></td>
<td>Review the FAA-approved NVIS FM and/or FMS as identified in the STC data.</td>
</tr>
<tr>
<td>3</td>
<td>ICAs</td>
<td></td>
<td>If the ICAs are not incorporated in the maintenance program, review the NVIS ICAs.</td>
</tr>
</tbody>
</table>
| 4    | Night Vision Goggle (NVG) serviceability/inspection |      | Review the records for NVG daily check, preflight check and 180-day inspection of the NVG. Reference NVG maintenance procedures as applicable.  

**NOTE:** These requirements may be included in OpSpecs A050 and D093. (e.g., The requirements for check/inspection may be found in the Rotorcraft Flight Manual Supplement (RFMS), the NVG Technical Manual, or the ICAs). |
| 5    | Minimum equipment list (MEL) usage for NVIS modified aircraft |      | Review the operator’s approved MEL procedures. Determine if MMEL PL-127 has been incorporated.  

**NOTE:** Standard MMEL supplemental lighting privileges do not apply to NVIS-modified cockpits/cabins. |
| 6    | Aircraft records                  |      | Review the applicable FAA Form 337, the STC “Limitations and Conditions” section, and aircraft record entries for the NVIS modification (e.g., flight log, logbook, and/or work orders).  

**NOTE:** In some cases there may be multiple entries. |
<table>
<thead>
<tr>
<th>Item</th>
<th>Complete Yes/No, or Not Applicable</th>
<th>Task</th>
<th>Description</th>
</tr>
</thead>
</table>
| 7    |                                   | Post-NVIS STC Modifications | Verify any subsequent aircraft modifications to the cockpit, cabin, or aircraft exterior involving a light emitting or reflecting device were properly evaluated in accordance with the Limitations and Conditions section of the STC.  

   **NOTE:** Any alteration, major or minor alterations, could adversely affect NVIS compatibility. |
| 8    |                                   | Airworthiness Directives (AD) and SBs | Review applicable ADs and, if required, Original Equipment Manufacturer (OEM) SBs and STC holder SBs for compliance.  

   **NOTE:** Ensure the operator has a process to obtain STC holder SBs. |
| 9    |                                   | Aircraft records/Approved data | If possible, obtain copies or photographs of any documents with potential concerns for later evaluation by the appropriate office. These may be needed to resolve findings. |
Section 3—Aircraft Inspection.

<table>
<thead>
<tr>
<th>Item</th>
<th>Task</th>
<th>Description</th>
</tr>
</thead>
</table>
| 1    | Instrument Readability| • Survey cockpit/cabin in daylight conditions, preferably in full sunlight.  
• Confirm all gauges/instruments are easily readable.  
• All colors on the gauges/instruments are easily identified.  
• Filters are not cracked, crazed, faded, or clouded by condensation.  
• Filtered electronic displays are easily readable at daylight brightness settings.  
• Caution and warnings are easy to see.  
• Filters are installed in accordance with the approved data. |
<p>| 2    | Instrument Panel      | Verify that instrument panel modifications are installed in accordance with the approved data (e.g., configuration exactly matches installation drawings and/or ICA). |
| 3    | Lower Console         | Verify lower console(s) modifications are installed in accordance with the approved data (e.g., configuration exactly matches installation drawings and/or ICA). |
| 4    | Overhead Panel        | Verify that overhead panel modifications are installed in accordance with the approved data (e.g., configuration exactly matches installation drawings and/or ICA). |
| 5    | Internal Aircraft Lighting | Verify that all internal cockpit and cabin lighting sources such as map lights, utility lights, aft cabin ceiling lights, etc., are modified in accordance with the approved data (e.g., configuration exactly matches installation drawings and/or ICA). |
| 6    | External Lighting     | Verify that all external lighting sources, such as position lights, strobe lights, and search lights, are modified in accordance with the approved data (e.g., configuration exactly matches installation drawings and/or ICA). |</p>
<table>
<thead>
<tr>
<th>Item</th>
<th>Complete Yes/No, or Not Applicable</th>
<th>Task</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td></td>
<td>Installed Equipment</td>
<td>Verify that installed equipment with light emitting sources such as medical equipment, infrared imaging systems, hoists, telecommunication equipment, etc., are modified in accordance with the approved data (e.g., configuration exactly matches installation drawings and/or ICA).&lt;br&gt;&lt;br&gt;<strong>NOTE:</strong> Carry-on equipment is not required to be depicted on the drawings.</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>Design Deficiencies</td>
<td>If deficiencies are found with NVIS filtration and NVIS lighting for installed equipment that could affect aircraft operation (i.e., safety issues). (See Section 4, item 4 for more information.)</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>Photos</td>
<td>Document the aircraft configuration with photos. These photos should document multiple angles depicting all equipment that emits or reflects light. It’s recommended to take these photos with power applied to the aircraft.</td>
</tr>
</tbody>
</table>

**Section 4—Closure.**

<table>
<thead>
<tr>
<th>Item</th>
<th>Complete Yes/No, or Not Applicable</th>
<th>Task</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>Disposition Findings</td>
<td>Analyze findings to determine the area of responsibility (e.g., Operator, modifier, or Aircraft Certification Office (ACO)/STC holder). Include any documents and photographs obtained during the inspection.</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Debrief Operator</td>
<td>Debrief deficiencies to the operator, Director of Maintenance (DOM), Director of Operations (DO), Chief Pilot, or his or her representative. Initiate any necessary Compliance Actions per Volume 14, Chapter 1, Section 2 to address deviations.</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>PTRS Entry</td>
<td>Document activities in the PTRS database. NVIS PTRS Activity Codes: 4634, 4651, 6634, and 6651. Compliance Action PTRS Activity Codes and/or NVIS activity record keyword comments per Volume 14, Chapter 1, Section 2.</td>
</tr>
<tr>
<td>Item</td>
<td>Complete Yes/No, or Not Applicable</td>
<td>Task</td>
<td>Description</td>
</tr>
<tr>
<td>------</td>
<td>----------------------------------</td>
<td>------</td>
<td>-------------</td>
</tr>
</tbody>
</table>
| 4    |                                  | Aircraft Evaluation Group (AEG) Notification (if necessary) | Contact the appropriate AEG and coordinate any issues with ICAs or type design deficiencies. Details should include at a minimum:  
  - Inspector name and contact information.  
  - Date of inspection.  
  - PTRS number.  
  - Aircraft make/model, tail number, and serial number.  
  - NVIS STC number.  
  - Applicable drawing number(s), revision levels, dates, and zones.  
  - Equipment part numbers.  
  - Short description of the service difficulty.  
  - Detailed photos of the deficiencies. |
| 5    | Task Completion                  | Followup options may include:  
  - Appropriate Compliance Action per Volume 14, Chapter 1, Section 2 when analysis of findings discloses maintenance issues.  
  - Written notification to the operator/program manager of the necessary changes.  
  - Communication with the certificate-holding district office (CHDO)/International Field Office (IFO) by the geographic unit finding deficiencies. |

**RESERVED.** N/A.
VOLUME 8 GENERAL TECHNICAL FUNCTIONS

CHAPTER 5 GENERAL AIRWORTHINESS AND AVIONICS TECHNICAL FUNCTIONS

Section 6 Safety Assurance System: Process a Service Difficulty Report

8-425 REPORTING SYSTEM(S).

A. Program Tracking and Reporting Subsystem (PTRS). 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), and use activity codes 3325, 3326, 5325, and 5326.

NOTE: For the purpose of this section, the term “operator” includes operators, air carriers, and repair stations.

B. Safety Assurance System (SAS). For Title 14 of the Code of Federal Regulations (14 CFR) parts 121 and 135 peer groups, use SAS automation. This section is related to SAS Element 4.4.2, (AW) MIS/SDR.

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 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 part 121, § 121.703, part 135, § 135.415, and 14 CFR 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. Sections 121.703(d) and 135.415(d) require each certificate holder to submit each report required by these sections, covering each 24-hour period, beginning
at 0900 local time 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 timeframe.

2) The reporting deadlines mandated by §§ 121.703(d) and 135.415(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 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) and 135.415(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/sdrs/). 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, it is strongly encouraged that service-related failures, malfunctions, and defects found by any maintenance personnel on any aircraft, engine, appliance, part, or product, 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.

NOTE: The PI will document this review by filing a 3325 PTRS record.

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;
- SAS Element Design Assessments (EDA) (if applicable); and
- SAS System or Subsystem Performance Assessments (SPA) (if applicable).

NOTE: PIs for air carriers whose oversight is conducted under SAS should include a review of the reports submitted to the SDRS during the development of their Comprehensive Assessment Plan (CAP) and during the planning review, as outlined in Volume 10.

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 (91K), 121, 125, 129, 135, and 145.
- Manufacturer’s and operator’s manuals.
- AC 20-109, Service Difficulty Program (General Aviation).
B. Forms:

- FAA Form 8070-1, Service Difficulty Report-Aeronautical Equipment.
- FAA Form 8010-4, Malfunction or Defect Report (for General Aviation (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. 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 135.415, 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.
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 the Enhanced Flight Standards Automation System (eFSAS).

B. Complete the Task. Completion of this task may result in the following:

   - Followup action for discrepancies, and
   - Compliance Action per Volume 14, Chapter 1, Section 2 to correct and document safety issues, deviations from procedures/standards, or 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), 135.415(d), and 145.221(a), and part 125, § 125.409(b) as applicable.

E. Document the Task. Once the PI reviews the submissions as required by §§ 121.703(d), 125.409(b), 135.415(d), and 145.221(a), as applicable, he or she must 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. Follow SAS guidance, if applicable.

RESERVED. Paragraphs 8-434 through 8-447.
VOLUME 10 SAFETY ASSURANCE SYSTEM POLICY AND PROCEDURES

CHAPTER 1 GENERAL

Section 4 Safety Assurance System: Acronyms, Abbreviations, Terms, and Definitions

10-1-4-1 GENERAL.

A. Purpose. This section provides a list of Safety Assurance System (SAS) acronyms, abbreviations, terms, and definitions.

B. Scope. This section provides an overview of the SAS acronyms and abbreviations in Table 10-1-4A, Acronyms and Abbreviations, and terms and definitions in Table 10-1-4B, Terms and Definitions.

Table 10-1-4A. Acronyms and Abbreviations

<table>
<thead>
<tr>
<th>Acronym/Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAA</td>
<td>Analysis, Assessment, and Action</td>
</tr>
<tr>
<td>AC</td>
<td>Advisory Circular</td>
</tr>
<tr>
<td>ACCD</td>
<td>Aircraft Configuration Control Document</td>
</tr>
<tr>
<td>ADG</td>
<td>Office of Hazardous Materials Safety</td>
</tr>
<tr>
<td>AFS</td>
<td>Flight Standards Service</td>
</tr>
<tr>
<td>AIPO</td>
<td>Analysis and Information Program Office</td>
</tr>
<tr>
<td>AITT</td>
<td>Action Item Tracking Tool</td>
</tr>
<tr>
<td>AQP</td>
<td>Advanced Qualification Program</td>
</tr>
<tr>
<td>ASA</td>
<td>Aviation Safety Assistant</td>
</tr>
<tr>
<td>ASAP</td>
<td>Aviation Safety Action Program</td>
</tr>
<tr>
<td>ASI</td>
<td>Aviation Safety Inspector</td>
</tr>
<tr>
<td>ASI-AD</td>
<td>Aviation Safety Inspector–Aircraft Dispatcher</td>
</tr>
<tr>
<td>ASI-CS</td>
<td>Aviation Safety Inspector–Cabin Safety</td>
</tr>
<tr>
<td>AST</td>
<td>Aviation Safety Technician</td>
</tr>
<tr>
<td>ATS</td>
<td>Air Transportation Supervisor</td>
</tr>
<tr>
<td>AUG</td>
<td>Automation User Guide</td>
</tr>
<tr>
<td>AW</td>
<td>Airworthiness (Avionics/Maintenance)</td>
</tr>
<tr>
<td>CAP</td>
<td>Comprehensive Assessment Plan</td>
</tr>
<tr>
<td>CASS</td>
<td>Continuing Analysis and Surveillance System</td>
</tr>
<tr>
<td>C DCT</td>
<td>Custom Data Collection Tool</td>
</tr>
<tr>
<td>CFR</td>
<td>Code of Federal Regulations</td>
</tr>
<tr>
<td>Acronym/Abbreviation</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>CHAT</td>
<td>Certificate Holder Assessment Tool</td>
</tr>
<tr>
<td>CHDO</td>
<td>Certificate-Holding District Office</td>
</tr>
<tr>
<td>CHEP</td>
<td>Certificate Holder Evaluation Process</td>
</tr>
<tr>
<td>CHOP</td>
<td>Certificate Holder Operating Profile</td>
</tr>
<tr>
<td>CIPO</td>
<td>Continual Improvement Program Office</td>
</tr>
<tr>
<td>COS</td>
<td>Continual Operational Safety</td>
</tr>
<tr>
<td>CPD</td>
<td>Certification Process Document</td>
</tr>
<tr>
<td>CPM</td>
<td>Certification Project Manager</td>
</tr>
<tr>
<td>CPT</td>
<td>Certification Project Team</td>
</tr>
<tr>
<td>CSOP</td>
<td>Certification Service Oversight Process</td>
</tr>
<tr>
<td>CTL</td>
<td>Certification Team Leader</td>
</tr>
<tr>
<td>DA</td>
<td>Design Assessment</td>
</tr>
<tr>
<td>DCT</td>
<td>Data Collection Tool</td>
</tr>
<tr>
<td>DEPM</td>
<td>Data Evaluation Program Manager</td>
</tr>
<tr>
<td>DOR</td>
<td>Dynamic Observation Report</td>
</tr>
<tr>
<td>DQG</td>
<td>Data Quality Guidelines</td>
</tr>
<tr>
<td>DQR</td>
<td>Data Quality Reviewer</td>
</tr>
<tr>
<td>EASA</td>
<td>European Aviation Safety Agency</td>
</tr>
<tr>
<td>EDA</td>
<td>Element Design Assessment</td>
</tr>
<tr>
<td>ED DCT</td>
<td>Element Design Data Collection Tool</td>
</tr>
<tr>
<td>EFIS</td>
<td>Electronic Flight Information System</td>
</tr>
<tr>
<td>EMP</td>
<td>Essential Maintenance Provider</td>
</tr>
<tr>
<td>EPA</td>
<td>Element Performance Assessment</td>
</tr>
<tr>
<td>EP DCT</td>
<td>Element Performance Data Collection Tool</td>
</tr>
<tr>
<td>ETOPS</td>
<td>Extended Operations</td>
</tr>
<tr>
<td>eVID</td>
<td>Enhanced Vital Information Database</td>
</tr>
<tr>
<td>FAA</td>
<td>Federal Aviation Administration</td>
</tr>
<tr>
<td>FLM</td>
<td>Frontline Manager</td>
</tr>
<tr>
<td>FO</td>
<td>Field Office</td>
</tr>
<tr>
<td>FOIA</td>
<td>Freedom of Information Act</td>
</tr>
<tr>
<td>FOQA</td>
<td>Flight Operations Quality Assurance</td>
</tr>
<tr>
<td>FSDO</td>
<td>Flight Standards District Office</td>
</tr>
<tr>
<td>Acronym/Abbreviation</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------</td>
<td>-----------------------------------------------------------</td>
</tr>
<tr>
<td>FSNFO</td>
<td>Flight Standards National Field Office</td>
</tr>
<tr>
<td>GEO ADD</td>
<td>Geographic Airport Data Display</td>
</tr>
<tr>
<td>HAA</td>
<td>Helicopter Air Ambulance</td>
</tr>
<tr>
<td>Hazmat</td>
<td>Hazardous Materials</td>
</tr>
<tr>
<td>HMDM</td>
<td>Hazardous Materials Division Manager</td>
</tr>
<tr>
<td>HM FLM</td>
<td>Hazardous Materials Frontline Manager</td>
</tr>
<tr>
<td>HMFO</td>
<td>Hazardous Materials Field Office</td>
</tr>
<tr>
<td>HMSP</td>
<td>Hazardous Materials Safety Program</td>
</tr>
<tr>
<td>HSI</td>
<td>Hazardous Materials Safety Inspector</td>
</tr>
<tr>
<td>ICAO</td>
<td>International Civil Aviation Organization</td>
</tr>
<tr>
<td>IEP</td>
<td>Internal Evaluation Program</td>
</tr>
<tr>
<td>ILT</td>
<td>Instructor-Led Training</td>
</tr>
<tr>
<td>IWP</td>
<td>Individual Work Plan</td>
</tr>
<tr>
<td>LOPA</td>
<td>List of Passenger Accommodations</td>
</tr>
<tr>
<td>MCPD</td>
<td>Major Change Process Document</td>
</tr>
<tr>
<td>MIP</td>
<td>Maintenance Implementation Procedures</td>
</tr>
<tr>
<td>MLF</td>
<td>Master List of Functions</td>
</tr>
<tr>
<td>NIIM</td>
<td>National Inspection and Investigations Manual</td>
</tr>
<tr>
<td>NSA</td>
<td>National Safety Analysis</td>
</tr>
<tr>
<td>OM</td>
<td>Office Manager</td>
</tr>
<tr>
<td>OpSpecs</td>
<td>Operations Specifications</td>
</tr>
<tr>
<td>ORA</td>
<td>Operations Research Analyst</td>
</tr>
<tr>
<td>PA</td>
<td>Performance Assessment</td>
</tr>
<tr>
<td>PHI</td>
<td>Principal Hazardous Materials Inspector</td>
</tr>
<tr>
<td>PI</td>
<td>Principal Inspector</td>
</tr>
<tr>
<td>POC</td>
<td>Point of Contact</td>
</tr>
<tr>
<td>PTRS</td>
<td>Program Tracking and Reporting Subsystem</td>
</tr>
<tr>
<td>RC</td>
<td>Regional Coordinator</td>
</tr>
<tr>
<td>RDL</td>
<td>Required Document List</td>
</tr>
<tr>
<td>RFSD</td>
<td>Regional Flight Standards Division</td>
</tr>
<tr>
<td>RI</td>
<td>Random Inspection</td>
</tr>
<tr>
<td>RM</td>
<td>Risk Management</td>
</tr>
<tr>
<td>Acronym/Abbreviation</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>RMP</td>
<td>Risk Management Process</td>
</tr>
<tr>
<td>RTR</td>
<td>Returns the Request</td>
</tr>
<tr>
<td>RWL</td>
<td>Resource Work List</td>
</tr>
<tr>
<td>SAFE</td>
<td>SAS Assistance, Feedback, or Enhancement</td>
</tr>
<tr>
<td>SAS</td>
<td>Safety Assurance System</td>
</tr>
<tr>
<td>SASO</td>
<td>System Approach for Safety Oversight</td>
</tr>
<tr>
<td>SAT</td>
<td>System Analysis Team</td>
</tr>
<tr>
<td>SDR</td>
<td>Service Difficulty Report</td>
</tr>
<tr>
<td>SME</td>
<td>Subject Matter Expert</td>
</tr>
<tr>
<td>SMS</td>
<td>Safety Management System</td>
</tr>
<tr>
<td>SPA</td>
<td>System or Subsystem Performance Assessment</td>
</tr>
<tr>
<td>SPAS</td>
<td>Safety Performance Analysis System</td>
</tr>
<tr>
<td>SP DCT</td>
<td>System/Subsystem Performance Data Collection Tool</td>
</tr>
<tr>
<td>SRM</td>
<td>Safety Risk Management</td>
</tr>
<tr>
<td>SRR</td>
<td>Specific Regulatory Requirement</td>
</tr>
<tr>
<td>TC</td>
<td>Team Coordinator (EDA only)</td>
</tr>
<tr>
<td>TL</td>
<td>Team Leader</td>
</tr>
<tr>
<td>VDRP</td>
<td>Voluntary Disclosure Reporting Program</td>
</tr>
<tr>
<td>WBT</td>
<td>Web-based Training</td>
</tr>
</tbody>
</table>

Table 10-1-4B. Terms and Definitions

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acceptable Risk</td>
<td>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.</td>
</tr>
<tr>
<td>Action Item Tracking Tool (AITT)</td>
<td>The AITT is a repository that provides access/manages functionality on all the action items created for any given certificate holder. The AITT includes action items created from various modules in Safety Assurance System (SAS) automation, such as Analysis, Assessment, and Action (AAA), Certificate Holder Assessment Tool (CHAT), Data Collection, and the AITT itself. The AITT does not replace documentation requirements specified in other guidance.</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Aircraft Technical Operations</td>
<td>Those functions associated with aircraft maintenance including: Training and Qualification, Maintenance Planning and Monitoring, Maintenance Operations, Technical Administration, Maintenance Facilities/Providers, Maintenance Special Requirements, and Maintenance Tools and Parts Control.</td>
</tr>
<tr>
<td>Applicant</td>
<td>An individual, group, or organization seeking new operating authority.</td>
</tr>
<tr>
<td>Assessment (in relation to Performance Assessment (PA) or Design Assessment (DA))</td>
<td>An item that the principal inspector (PI)/certification project manager (CPM) schedules or plans on the Comprehensive Assessment Plan (CAP). An assessment is created to evaluate the certificate holder’s or applicant’s process and procedures. Assessments include System/Subsystem Performance Data Collection Tools (SP DCT), Element Performance Data Collection Tools (EP DCT), Element Design Data Collection Tools (ED DCT), Custom Data Collection Tools (C DCT), random inspections (RI) (Ramp), and En Route inspections.</td>
</tr>
<tr>
<td>Authoring Tool</td>
<td>The authoring tool is an application used by AFS-900 to sustain and continuously improve Data Collection Tools (DCT).</td>
</tr>
<tr>
<td>Authority Attribute</td>
<td>A clearly identifiable, qualified, and knowledgeable person who has the authority to set up and change a process.</td>
</tr>
<tr>
<td>Avionics Special Emphasis Programs</td>
<td>Programs within the certificate holder/applicant’s maintenance program which require specific procedures to ensure compliance with current regulations and guidance. These programs include: Cockpit Voice Recorders, Flight Data Recorders, Air Traffic Control (ATC) Transponder, Lower Landing Minimums, Reduced Vertical Separations Minimums, Aircraft Network Security Program, and Electrical Wiring Interconnection Systems.</td>
</tr>
<tr>
<td>Baseline Interval</td>
<td>The baseline interval is the criticality value of the assessment (high, medium, or low).</td>
</tr>
<tr>
<td>Bundling (in reference to planning assessments)</td>
<td>Grouping specific assessments together regardless of criticality for better resource management.</td>
</tr>
<tr>
<td>Certificate Holder Assessment Tool (CHAT)</td>
<td>The CHAT is an automated tool for each certificate holder and specialty that contains a series of risk indicators and PI options that help the PI assess risk. The output of the CHAT will assist the PIs to justify changes in resource order on the CAP.</td>
</tr>
<tr>
<td>Certificate Holder Evaluation Process (CHEP)</td>
<td>A standardized process to evaluate Title 14 of the Code of Federal Regulations (14 CFR) parts 121, 135, and 145 certificate holders. A CHEP can be conducted at the local, regional, or national level.</td>
</tr>
<tr>
<td>Certificate Holder Maintenance Provider</td>
<td>An individual whom the certificate holder has identified for the responsibility for the accomplishment of any of its maintenance, preventive maintenance, or alterations.</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Certificate Holder Operating Profile (CHOP) (Also known as the</td>
<td>The main purpose of the operating profile is to generate a specific set of DCTs used to conduct PAs and DAs. The operating profile is developed from configuration data taken from the enhanced Vital Information Database (eVID) and operations specifications (OpSpecs) as well as questions that must be answered by the PIs/CPMs. The operating profile represents a certificate holder’s or applicant’s scope of operations. The output of the operating profile is scoped data collection questions.</td>
</tr>
<tr>
<td>Operating Profile)</td>
<td></td>
</tr>
<tr>
<td>Certificated Repair Station (CRS)</td>
<td>Part 145 repair station.</td>
</tr>
<tr>
<td>Certification Project Manager (CPM)</td>
<td>Primary Federal Aviation Administration (FAA) spokesperson throughout the SAS initial certification process. The CPM is responsible for ensuring that all certification job functions are complete.</td>
</tr>
<tr>
<td>Certification Project Team (CPT)</td>
<td>Responsible for the oversight functions of an initial certification.</td>
</tr>
<tr>
<td>Comprehensive Assessment Plan (CAP)</td>
<td>The CAP is a tool used for planning, documenting, and tracking assessments. The PIs/CPMs use the CAP to schedule and adjust resource order and due dates of assessments, and to record the reasons for making those adjustments. The CAP is a 2-year plan.</td>
</tr>
<tr>
<td>Configuration Data</td>
<td>A set of unique characteristics or attributes that define the certificate holder’s or applicant’s scope of operation. For example, route structure, fleet type, fleet size, domestic vs. international operations, and extended operations (ETOPS) are types of configuration data.</td>
</tr>
<tr>
<td>Continual Operational Safety (COS)</td>
<td>Routine recurring PAs (routine surveillance through safety inspections). Also includes certificate management, the management of major changes in operation (i.e., system configuration change).</td>
</tr>
<tr>
<td>Contract Maintenance</td>
<td>Any maintenance, preventive maintenance, or alterations accomplished by a certificate holder maintenance provider.</td>
</tr>
<tr>
<td>Control Attribute</td>
<td>Checks and restraints designed into a process to ensure a desired result.</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>----------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Custom Data Collection Tool (C DCT)                | A PI can create a C DCT to include:  
Both scoped and unscoped questions.  
Design questions.  
Performance questions.  
A PI cannot create a C DCT to:  
Combine design and performance questions or  
Combine Airworthiness and Operations questions.  
C DCTs created by PIs have the option of going through the AAA.  
A template C DCT consists of questions for focused inspections.  
C DCTs created from a template will automatically go through the AAA. |
| Data Collection Tools (DCT)                        | Tools designed to collect data to help the PI/CPM determine if a certificate holder or applicant follows written procedures, controls, and process measures for each element. Includes:  
SP DCTs, EP DCTs, ED DCTs, C DCTs, and En Route and Ramp inspections. |
<p>| Data Quality Guidelines (DQG)                      | Guidelines that help determine acceptable levels of data quality during the evaluation of inspection records.                                                                                         |
| Data Quality Reviewer (DQR)                        | An individual who is designated for reviewing DCT reports and records to ensure they meet DQGs. This automation role can be held by a Frontline Manager (FLM), regional coordinators, or an existing data evaluation program manager (DEPM). |
| Due Date                                           | The required or expected completion date for assessments or DCTs.                                                                                                                                         |
| Dynamic Observation Report (DOR)                   | The DOR is used to record safety observations outside the planned oversight process. There are two types of DORs, “Question-Based” and “Other.” The Question-Based DOR is used when there are existing SP DCT or EP DCT questions related to the observation. If there are no applicable questions, then it would be designated an “Other DOR.” DORs may be submitted for any part 121, 135, or 145 certificate holders. |
| Element                                            | An element refers to the groupings per subsystem that characterize the components of that system.                                                                                                         |
| Element Design Assessment (EDA)                    | The SAS function that measures an applicant’s or certificate holder’s operating systems at the element level for compliance with the full intent of regulations and system safety, including the requirement to provide service at the highest level of safety in the public interest. |
| Element Performance Assessment (EPA)               | The SAS function that measures an applicant’s or certificate holder’s operating systems at the element level to confirm that the certificate holder is following its procedures and producing the intended result. |</p>
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>En Route Inspection</td>
<td>An inspection of the in-flight operations of a certificate holder within the operational environment of the air transportation system. Requires management approval.</td>
</tr>
<tr>
<td>Essential Maintenance Provider (EMP)</td>
<td>An EMP is any person with whom a part 121 certificate holder has made arrangements for the accomplishment of any of its on-wing maintenance or alterations designated as Required Inspection Items (RII). EMP inspections are scheduled every 3 years.</td>
</tr>
<tr>
<td>External Portal</td>
<td>The external portal is a secured, user-friendly, Web-based system that allows the PI/CPM and the certificate holder or applicant to exchange information and populate the SAS automation.</td>
</tr>
<tr>
<td>Frontline Manager (FLM)</td>
<td>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.</td>
</tr>
<tr>
<td>Geographic Resource</td>
<td>A geographic resource is an ASI that is not included on the office roster that can be requested by a PI or CPM to conduct planned or unplanned data collection. The process to request a geographic resource is described in Volume 10, Chapter 4.</td>
</tr>
<tr>
<td>Hazard</td>
<td>Hazard means a condition that can lead to injury, illness, or death to people; damage to or loss of a system, equipment, or property; or damage to the environment.</td>
</tr>
<tr>
<td>Hazardous Materials (Hazmat)</td>
<td>A substance or material that the Secretary of Transportation has determined is capable of posing an unreasonable risk to health, safety, and property when transported in commerce, and has designated as hazardous under Title 49 of the United States Code (49 U.S.C.) § 5103. The term includes hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, materials designated as hazardous in the Hazardous Materials Table (see Title 49 of the Code of Federal Regulations (49 CFR) part 172, § 172.101), and materials that meet the defining criteria for hazard classes and divisions in 49 CFR part 173.</td>
</tr>
<tr>
<td>Identified Risk</td>
<td>A level of risk that is identified through various analysis techniques.</td>
</tr>
<tr>
<td>Individual Work Plan (IWP)</td>
<td>A rolling plan documenting the risk-prioritized DA and PA activities for each ASI. The IWP includes estimates of resources necessary to complete each activity and includes other ASI activities, such as training and office duties.</td>
</tr>
<tr>
<td>Interfaces Attribute</td>
<td>Interactions between processes that must be managed in order to ensure desired outcomes.</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Maintenance Implementation Procedures (MIP)</td>
<td>The procedural document authorized by the Bilateral Aviation Safety Agreement (BASA) related to the performance of maintenance, alterations, and modifications on civil aeronautical products. This document defines the process for reciprocal acceptance of each authority’s recommendations for certification, renewal, and acceptance of eligible repair stations and maintenance organizations.</td>
</tr>
<tr>
<td>Maintenance Special Emphasis Programs</td>
<td>Programs within the certificate holder/applicant’s maintenance program requiring specific procedures to ensure compliance with current regulations and guidance. These programs include: Aging Airplane Inspections, Repair Assessment for Pressurized Fuselages, Damage Tolerance Assessment of Repairs to Pressurized Fuselages, Fatigue Critical Structure Inspections, Electrical Wiring Interconnection Systems (EWIS), Fuel Tank System Maintenance Program, Limit of Validity, and Flammability Reduction Means.</td>
</tr>
<tr>
<td>Master List of Functions (MLF)</td>
<td>A list of functions that a part 121, 135, or 145 certificate holder or applicant could perform.</td>
</tr>
<tr>
<td>Mitigate</td>
<td>An action needed to reduce the level of risk.</td>
</tr>
<tr>
<td>Monitor</td>
<td>A risk level within accepted limits and no action is required beyond the normal planning cycle.</td>
</tr>
<tr>
<td>National/Regional C DCT</td>
<td>A template C DCT that consists of questions for focused inspections. The request to create a national/regional C DCT goes to AFS-900 Technical Support Team (TST) to author the questions. A national/regional C DCT created from a template will automatically go through the AAA.</td>
</tr>
<tr>
<td>National Safety Analysis (NSA)</td>
<td>A national system-level function that provides analytical support to identify new hazards or safety issues within the aviation community, assesses adverse trends in safety performance, and evaluates the effectiveness of existing safety risk controls.</td>
</tr>
<tr>
<td>New Hazard</td>
<td>A new hazard is defined as one that is not controlled by current regulations or did not previously exist, such as something that has arisen from new technologies or operational procedures.</td>
</tr>
<tr>
<td>Off-Hour</td>
<td>Activities that occur outside of normal FAA duty hours, including weekends.</td>
</tr>
<tr>
<td>Office Roster</td>
<td>The automation provides a roster that lists all the certificates and the office personnel. When FLMs assign work, they can select from any of the office personnel listed on the roster, regardless of the certificate.</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>---------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Operating Profile (Also known as Certificate Holder Operating Profile (CHOP))</td>
<td>OpSpecs and eVIDs create an operating profile, which is a tailored list of systems/subsystems, elements, and questions that are applicable to a certificate holder’s or applicant’s scope of operation. The PI/CPM can modify the profile if the certificate holder or applicant has a unique situation that results in differences from the standard configuration, such as a deviation or exemption.</td>
</tr>
<tr>
<td>Operational Risk</td>
<td>A risk indicator that has the potential to affect the operations of the certificate holder.</td>
</tr>
<tr>
<td>Operations Research Analyst (ORA)</td>
<td>Responsible for assisting the office personnel in collecting and analyzing certificate holder or applicant data.</td>
</tr>
<tr>
<td>Operations Specifications (OpSpecs)</td>
<td>Legal and binding contract between a certificate holder and the FAA that documents specifically how the certificate holder operation is conducted.</td>
</tr>
<tr>
<td>Organizational Risk</td>
<td>A risk indicator that has the potential to affect the organizational and environmental factors of the certificate holder.</td>
</tr>
<tr>
<td>Outsourcing</td>
<td>The practice of contracting internal certificate holder programs, processes, and traditional certificate holder functions to external independent vendors, suppliers, and contractors, such as maintenance, training, and ground handling. Oversight for the quality of the overall process remains with the certificate holder.</td>
</tr>
<tr>
<td>Peer Group A</td>
<td>All part 121 certificate holders.</td>
</tr>
<tr>
<td>Peer Group B</td>
<td>Part 135—10 or more seats.</td>
</tr>
<tr>
<td>Peer Group C</td>
<td>Part 135—9 or less seats.</td>
</tr>
<tr>
<td>Peer Group D</td>
<td>Part 135—9 or less single-pilot only.</td>
</tr>
<tr>
<td>Peer Group E</td>
<td>Part 135 Helicopter Air Ambulance (HAA).</td>
</tr>
<tr>
<td>Peer Group F</td>
<td>Part 145 located within the United States.</td>
</tr>
<tr>
<td>Peer Group G</td>
<td>Part 145 located outside of the United States without Aviation Safety Agreement.</td>
</tr>
<tr>
<td>Peer Group H</td>
<td>Part 145 located outside of the United States with Aviation Safety Agreement.</td>
</tr>
<tr>
<td>Performance History</td>
<td>The results of the certificate holder’s operations over time.</td>
</tr>
<tr>
<td>Performance Measure</td>
<td>A description of the desired outcome of a certificate holder element process. It is used to determine whether the desired results of that process were achieved.</td>
</tr>
<tr>
<td>Planning Cycle</td>
<td>The term cycle is used to distinguish the planning differences between part 121 and parts 135 and 145. The planning cycle for part 121 is quarterly; for parts 135 and 145, the planning cycle is annually.</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Preapplication Statement of Intent (PASI)</td>
<td>The completed PASI is a document used in initial certification that denotes intent by the applicant to initiate the certification process and which allows the FAA to plan activities and prepare to commit resources.</td>
</tr>
<tr>
<td>Principal Inspector (PI)</td>
<td>The PI is the primary FAA spokesperson and decision maker for their specialty in all applications of SAS.</td>
</tr>
<tr>
<td>Procedures Attribute</td>
<td>Documented methods to accomplish a process.</td>
</tr>
<tr>
<td>Process</td>
<td>Policies and procedures designed to produce a desired result or end product for a certificate holder.</td>
</tr>
<tr>
<td>Process Measures Attribute</td>
<td>Used to validate a process and identify problems or potential problems in order to correct them.</td>
</tr>
<tr>
<td>Random Inspections (RI) (Ramp)</td>
<td>Planned or unplanned ramp inspections, with authorization. Supports the Geographic Airport Data Display (GEO ADD) tool and Public Law (PL) 111-216, Airline Safety and Federal Aviation Administration Extension Act of 2010.</td>
</tr>
<tr>
<td>Resource Work List (RWL)</td>
<td>Located in Module 3, Resource Management. The RWL displays the rows for the DCTs to which the FLM/Office Manager (OM) can assign (or recommend in the case of the PI/CPM).</td>
</tr>
<tr>
<td>Responsibility Attribute</td>
<td>A clearly identifiable, qualified, and knowledgeable person who is accountable for the quality of a process.</td>
</tr>
<tr>
<td>Risk</td>
<td>The combination of predicted severity and the likelihood of the potential effect of a hazard.</td>
</tr>
<tr>
<td>Risk Analysis</td>
<td>The injury and damage potential of events related to hazards regarding the likelihood of occurrence and severity of resulting consequences.</td>
</tr>
<tr>
<td>Risk Assessment</td>
<td>The process by which the results of risk analysis are used to make decisions.</td>
</tr>
<tr>
<td>Risk Control</td>
<td>To reduce or eliminate the effects of hazards.</td>
</tr>
<tr>
<td>Risk Factors</td>
<td>Risk factors identify what must be controlled in order to reduce the level of risk.</td>
</tr>
<tr>
<td>Risk Indicator</td>
<td>Conditions that may create hazards in the certificate holder’s systems.</td>
</tr>
<tr>
<td>Risk Management (RM)</td>
<td>The process composed of describing the system, identifying the hazards, and analyzing, assessing, and controlling risk.</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Risk Severity Values</td>
<td>High—Loss (or breakdown) of an entire system or subsystem; accident or serious incident. Medium—Potential moderate damage to an aircraft, partial breakdown of a certificate holder system, or a violation of regulations or company rules. Low—Potential poor certificate holder performance or disruption of the carrier’s operations.</td>
</tr>
<tr>
<td>Safety</td>
<td>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.</td>
</tr>
<tr>
<td>Safety Assurance</td>
<td>Processes within a Safety Management System (SMS) that function systematically to ensure the performance and effectiveness of safety risk controls and that the organization meets or exceeds its safety objectives through the collection, analysis, and assessment of information.</td>
</tr>
<tr>
<td>Safety Assurance System (SAS)</td>
<td>SAS is the Flight Standards Service (AFS) oversight of parts 121, 135, and 145 certificate holders and applicants.</td>
</tr>
<tr>
<td>Safety Attributes</td>
<td>The qualities of a system (e.g., authority, responsibility, procedures, controls, process measures, and interfaces) that should be present in a well-designed certificate holder system and process.</td>
</tr>
<tr>
<td>Safety Management System (SMS)</td>
<td>The formal, top-down, organization-wide approach to managing safety risk and assuring the effectiveness of safety risk controls. It includes systemic procedures, practices, and policies for management of safety risk.</td>
</tr>
<tr>
<td>Safety Performance Objectives</td>
<td>Measurable goals or desirable outcomes related to safety that the organization wants to achieve through the design of their processes.</td>
</tr>
<tr>
<td>Scalability</td>
<td>Scalability allows us to tailor and scope the operating profile to each certificate holder’s unique operation. This is accomplished through the use of peer groups and configuration data which results in scoped DCTs.</td>
</tr>
<tr>
<td>Scoped DCT</td>
<td>A DCT created using a process that filters available questions to include only those that apply to a specific certificate holder/applicant.</td>
</tr>
<tr>
<td>Scope of Operation</td>
<td>Description of an applicant’s or certificate holder’s authorized activities in air commerce.</td>
</tr>
<tr>
<td>Shared Resource</td>
<td>A shared resource is an ASI who is assigned to conduct work activities for more than one certificate holder.</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Standard DCT</td>
<td>There are three types of standard DCTs: System/Subsystem Performance DCTs (SP DCT); Element Performance DCTs (EP DCT); and Element Design DCTs (ED DCT). Each standard DCT in SAS aligns with a specific MLF label.</td>
</tr>
<tr>
<td>Subsystem</td>
<td>The groupings per system that characterize the major operations within that system.</td>
</tr>
<tr>
<td>System</td>
<td>A group of interrelated processes which are a combination 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. For the purposes of SAS, the six systems are defined as the following: 1.0 Organizational Management, 2.0 Flight Operations, 3.0 Operational Control, 4.0 Aircraft Technical Operations, 5.0 Onboard Operations, and 6.0 Ground and Station Operations.</td>
</tr>
<tr>
<td>System Analysis Team (SAT)</td>
<td>A team that includes participants from the FAA, the certificate holder, other FAA organizations, and other non-FAA entities (e.g., the manufacturer) to accomplish further analysis and determine root causes of system deficiencies.</td>
</tr>
<tr>
<td>System Approach</td>
<td>The structured, safety-driven means by which the FAA certifies and conducts oversight activities on elements that are designed to interact predictably within the certificate holder’s systems and subsystems.</td>
</tr>
<tr>
<td>Systemic</td>
<td>Design/performance issues affecting one or more systems in a similar manner and magnitude. Also known as constant error.</td>
</tr>
<tr>
<td>System Safety</td>
<td>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.</td>
</tr>
<tr>
<td>System Stability</td>
<td>A state of constant balance of safety resulting from a certificate holder’s ability to effectively manage aspects of their organization and environment (those they control directly and those over which they have no direct control).</td>
</tr>
<tr>
<td>Tailoring</td>
<td>Tailoring applies to the DAs and PAs to determine which DCTs are used for a particular assessment.</td>
</tr>
<tr>
<td>Team Coordinator (TC)</td>
<td>The TC organizes and coordinates the team activities. The TC monitors the ED DCT for accuracy and completeness.</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>--------------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Transfer</td>
<td>To reassign the risk to another FAA entity that has the authority to address the risk.</td>
</tr>
<tr>
<td>Unacceptable Risk</td>
<td>Risk that cannot be tolerated by the managing activity. It is a subset of identified risk that must be eliminated or controlled.</td>
</tr>
</tbody>
</table>

10-1-4-3 through 10-1-4-29 RESERVED.
10-10-1-1 GENERAL.

A. Purpose. This section provides procedures to transfer the oversight responsibility of an existing Title 14 of the Code of Federal Regulations (14 CFR) part 121, 135, or 145 certificate holder’s operating certificate from one certificate-holding district office (CHDO) to another. The Federal Aviation Administration (FAA) considers available resources and oversight requirements before transferring a certificate. If you are a participant in a certificate transfer, this section applies to you.

B. Scope. Participants in a certificate transfer must follow this process to complete a certificate transfer when the transfer is not the result of a merger or acquisition. For more information on mergers or acquisitions, see Volume 3, Chapter 34, Section 1.

10-10-1-3 RESERVED.

10-10-1-5 BACKGROUND. This section describes the process of a certificate transfer from one CHDO to another.

10-10-1-7 CERTIFICATE TRANSFER PROCESS.

Figure 10-10-1A. Certificate Transfer Process Flowchart
10-10-1-9 PROCEDURES.

A. How to Proceed If a Certificate Holder Requests a Transfer. A certificate holder requests a certificate transfer by submitting a written request to the CHDO. The request must outline a plan and include the proposed timeframe and justification for the transfer. The CHDO immediately notifies its regional Flight Standards division (RFSD) and forwards a copy of the request and plan to the RFSD manager.

B. How the FAA Initiates a Certificate Transfer. The FAA may decide to transfer a certificate because conditions indicate that better service and surveillance would occur if the certificate moves to another CHDO. Budget and personnel considerations would also be factors in the decision to transfer.

1) National Level. The Office of the Director, Flight Standards Service (AFS-1), may identify a certificate to transfer within a region or from one region to another. Managers may identify conditions that indicate the FAA could provide better service and/or surveillance to a certificate holder if the certificate moved to another CHDO. AFS-1 notifies the appropriate RFSD manager(s) and the CHDO manager(s) of the certificate selected for transfer.

2) Regional Level. The RFSD manager responsible for the certificate holder’s oversight may identify a certificate for transfer within its region. The RFSD manager notifies AFS-1 and the CHDO managers of the certificate selected for transfer. An RFSD manager may also request AFS-1 to transfer a certificate from within its region to another region.

3) Office Level. The Office Manager (OM) who is responsible for the oversight of a certificate holder may identify a certificate for transfer. The OM initiates the request for a transfer through the RFSD.

C. Assistance from the Flight Standards National Field Office (FSNFO) (AFS-900). Contact AFS-900 for assistance in the following areas:

- The Field Support Program Office (FSPO) supports adjustments to the Comprehensive Assessment Plan (CAP) and closing open assessments;
- The Certification and Evaluation Program Office supports the National Certificate Holder Evaluation Process (CHEP) for part 121 CHEPs; and
- The Continual Improvement Program Office (CIPO) supports questions about Safety Assurance System (SAS) policy, automation, and Data Collection Tools (DCT).

D. Phase 1—Releasing RFSD Office Initial Tasks. The RFSD steps may overlap with the releasing CHDO steps, and steps in different phases may occur simultaneously. In general, the releasing RFSD office is responsible for:

1) Coordinating with the Director or Deputy Director of the Flight Standards Service (AFS) if the transfer significantly affects the FAA.

2) Reviewing the certificate holder’s transfer plan.
3) Scheduling an initial briefing with the acquiring RFSD office and both CHDO OMs to discuss the transfer details and identify when the transfer of oversight responsibility will occur.

4) Contacting AFS-900 for support during the transfer process, as necessary.

5) Contacting the AFS-900 Certification and Evaluation Program Office to coordinate a date for a National CHEP evaluation if one has not been accomplished within the last 24 months or as needed, involving part 121 certificate transfers.

NOTE: National CHEPs are only conducted for a part 121 certificate holder that is transferring to a different region.

E. Phase 2—Releasing CHDO Tasks. The releasing CHDO must remain fully staffed during the transfer. In general, the releasing CHDO:

1) Contacts AFS-900 for support during the transfer process (as necessary).

2) Addresses unresolved issues associated with the certificate holder.

3) Ensures principal inspectors (PI) evaluate all SAS risk indicators by completing the Certificate Holder Assessment Tool (CHAT) in accordance with Volume 10, Chapter 3, Section 1.

4) Reviews the certificate holder’s CHDO files and information in FAA databases. Include the files listed on the CHDO’s official files list applicable to the certificate holder (refer to the current edition of FAA Order 1350.14, Records Management, for a complete list of files).

5) Coordinates with the acquiring RFSD office and acquiring CHDO to:
   - Transfer the CHDO files;
   - Hold a meeting with the certificate holder to review the certificate transfer process and certificate holder’s transfer plan; and
   - Transfer the certificate.

6) Completes and closes all of the open work assignments prior to the certificate transfer. Otherwise, the releasing CHDO manager must ensure that the open work assignments are unassigned or unresourced before transferring the certificate. The acquiring CHDO then assigns or resources the SAS work assignments that were not previously completed.

7) Uses the CAP to document critical planned surveillance.

8) Meets with the acquiring CHDO and discusses the SAS work program. Reviews the CHAT risk indicators, System/Subsystem Performance Assessments (SPA), Element Performance Assessments (EPA), Element Design Assessments (EDA), and the Analysis, Assessment, and Action (AAA).
9) Verifies requests are on file for authorizations, limitations, exemptions, and deviations, and that the information agrees with the information contained in the certificate holder’s operations specifications (OpSpecs). Verifies that all authorizations and limitations in OpSpec A004, and extensions and deviations in OpSpec A005 of the certificate holder’s OpSpecs, have the correct and current OpSpecs assigned.

10) Reviews the certificate holder’s current “vitals” for accuracy in SAS. Contacts the Aviation Data Systems Branch (AFS-620) (as necessary).

11) Completes enforcement actions, surveillance, or followup for:

- Outstanding hotline complaints;
- Congressional inquiries;
- Safety Issues Reporting System (SIRS) issues;
- Whistleblower complaints;
- Voluntary disclosures; and
- Incidents, occurrences, etc., as necessary.

12) Forwards the certificate holder’s CHDO files and the completed sections of the Certificate Transfer Process Job Aid (see Figure 10-10-1B, Certificate Transfer Process Job Aid) to the releasing RFSD office. Forwards the files, along with other information maintained outside FAA computer databases, with the transfer documents.

F. Phase 3—Releasing RFSD Office Final Tasks. The releasing RFSD office:

1) Contacts AFS-900 for support during the transfer process (as necessary).

2) Reviews the certificate holder’s CHDO files and provides continued support, direction, and procedures to the releasing CHDO.

3) Coordinates with the acquiring RFSD office and CHDO for the transfer of signature authority in the Web-based Operations Safety System (WebOPSS).

4) Coordinates with the acquiring RFSD office and the acquiring CHDO to complete the transfer of the certificate.

G. Phase 4—Acquiring RFSD Office Initial Tasks. The acquiring RFSD office:

1) Contacts AFS-900 for support during the transfer process (as necessary).

2) Coordinates with the releasing RFSD office and acquiring CHDO to review the certificate holder’s transfer plan and adjust the plan (as necessary).

3) Coordinates with the releasing RFSD office and the acquiring CHDO to review the certificate transfer process and Certificate Transfer Process Job Aid. Adjusts plans and schedules (as necessary).

4) Ensures the acquiring CHDO has the necessary resources, staffing, and training.
**H. Phase 5—Acquiring CHDO Tasks.** The acquiring CHDO:

1) Contacts AFS-900 for support during the transfer process (as necessary).

2) Reviews the certificate transfer plan and Certificate Transfer Process Job Aid, and adjusts the plan (as necessary) in coordination with the acquiring RFSD office and the releasing CHDO.

3) Verifies the resolution of all open items and discrepancies.

4) Ensures the CHDO positions are staffed as necessary.

5) Completes training. For training requirements, see Volume 10, Chapter 1, Section 3.

6) Updates the certificate holder’s or applicant’s team roster in SAS automation. Upon request, AFS-900 can assist the Data Quality Reviewer (DQR) (or assigned CHDO member) with populating the initial SAS tables for the new CHDO.

7) Meets with the releasing CHDO to discuss the SAS work program. Reviews the CHAT risk indicators and the AAA.

8) Reviews and/or revises the Certificate Holder Operating Profile (CHOP), CHAT, and CAP after becoming primarily responsible for oversight. Ensures there are adequate resources for the initial quarter after the acquiring CHDO becomes responsible for the oversight of the certificate.

9) Completes certificate management requirements that are independent of SAS to include:

   a) Issuing a new certificate, if applicable;

   b) Issuing applicable paragraphs in WebOPSS;

   c) Transferring “Open” and “Planned” Program Tracking and Reporting Subsystem (PTRS) records;

   d) Updating Master Minimum Equipment List (MMEL) user data (see Volume 4, Chapter 4, Section 9); and

   e) Ensuring the enhanced Vital Information Database (eVID) is current.

10) Forwards a copy of the completed Certificate Transfer Process Job Aid, the certificate transfer plan, and the appropriate documents to the appropriate RFSD office.

11) Holds an introductory meeting with the certificate holder, the new CHDO OM, and the CHDO.
I. Phase 6—Acquiring RFSD Office Final Tasks. The acquiring RFSD office:

1) Validates that the Certificate Transfer Process Job Aid (Figure 10-10-1B) is complete.

2) Ensures that administrative functions are complete, including:
   a) Update to personnel actions, staffing, training, and assignments.
   b) Transfer of all files from the releasing CHDO to the acquiring CHDO.
   c) Entry of required PTRS records:
      - Operations: 1245;
      - Maintenance: 3240; and
      - Avionics: 5240.
   d) Update of eVID.
   e) Issue of a new operating or Air Agency Certificate.
   f) Revision and reissue of OpSpecs.
   g) Verification of the accuracy of the SAS roster.

3) Notifies national-, regional-, and office-level AFS personnel when the acquiring CHDO is actively managing the certificate.

4) Completes the certificate transfer documentation and provides a copy of the certificate transfer record to the releasing and acquiring offices, including:
   a) Transfer requests/notifications.
   b) Records of meetings and/or briefings.
   c) Discrepancies.
   d) Discrepancy resolutions.
   e) Confirmations of PI’s training, including:
      - Completed Certificate Transfer Process Job Aid;
      - Completed certificate transfer plan; and
      - Acquisition of the CHDO’s “N/A Report” from the Operations Research Analyst (ORA) and the CHAT/CAP report as of the official transfer date.

10-10-1-11 through 10-10-1-13 RESERVED.
10-10-1-15 JOB AIDS.

Figure 10-10-1B. Certificate Transfer Process Job Aid

<table>
<thead>
<tr>
<th>Job Aid Start Date:</th>
<th>Certificate Holder:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Phase 1—Releasing Regional Flight Standards Division (RFSD) Office Initial Tasks</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Item</strong></td>
<td><strong>Initials/Date or N/A</strong></td>
</tr>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Item</td>
<td>Initials/Date or N/A</td>
</tr>
<tr>
<td>------</td>
<td>---------------------</td>
</tr>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Item</td>
<td>Details</td>
</tr>
<tr>
<td>------</td>
<td>---------</td>
</tr>
<tr>
<td>7</td>
<td>Verify that PIs complete and close open Safety Assurance System (SAS) work assignments.</td>
</tr>
<tr>
<td>8</td>
<td>Verify that Frontline Managers (FLM) unassign any planned System/Subsystem Performance Assessments (SPA), Element Design Assessments (EDA), Element Performance Assessments (EPA) and Custom Data Collection Tools (C DCT).</td>
</tr>
<tr>
<td>9</td>
<td>Verify that PIs utilize Comprehensive Assessment Plan (CAP) to document critical planned surveillance.</td>
</tr>
<tr>
<td>10</td>
<td>Meet with the acquiring CHDO and discuss the SAS work program. Review the CHAT risk indicators and the Analysis, Assessment, and Action (AAA).</td>
</tr>
<tr>
<td>11</td>
<td>Confirm that the information contained in the certificate holder’s operations specifications (OpSpecs) agrees with requests on file.</td>
</tr>
<tr>
<td>12</td>
<td>Verify that all authorizations and limitations listed in OpSpec A004, and exemptions and deviations listed in OpSpec A005, have an associated Web-based Operations Safety System (WebOPSS) paragraph assigned. Ensure that all OpSpec templates are current.</td>
</tr>
<tr>
<td>13</td>
<td>Review the certificate holder’s current “vitals” for accuracy in SAS. If necessary, contact the Aviation Data Systems Branch (AFS-620).</td>
</tr>
<tr>
<td>14</td>
<td>Complete enforcement actions and surveillance for outstanding hotline complaints, congressional inquiries, Safety Issues Reporting System (SIRS) issues, whistleblowers, voluntary disclosures, incidents, occurrences, etc.</td>
</tr>
<tr>
<td>15</td>
<td>Forward the certificate holder’s CHDO files and the completed sections of the Certificate Transfer Process Job Aid to the releasing RFSD office. Forward the files and information maintained outside FAA databases, along with the transfer documents.</td>
</tr>
</tbody>
</table>

Notes:

**Phase 3—Releasing RFSD Office Final Tasks**

<table>
<thead>
<tr>
<th>Item</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Contact AFS-900 for support during the transfer process (as necessary).</td>
</tr>
<tr>
<td>2</td>
<td>Receive and review the certificate holder’s CHDO files and provide continued support, direction, and procedures during transfer process.</td>
</tr>
<tr>
<td>3</td>
<td>Coordinate with the acquiring RFSD office for transfer of signature authority in WebOPSS (coordinate with the National Service Desk).</td>
</tr>
<tr>
<td>4</td>
<td>Coordinate with the acquiring RFSD office and CHDO to complete transfer of certificate.</td>
</tr>
</tbody>
</table>
### Phase 4—Acquiring RFSD Initial Tasks

<table>
<thead>
<tr>
<th>Item</th>
<th>Initials/Date or N/A</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>Contact AFS-900 for support during the transfer process (as necessary).</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Review the certificate holder’s or applicant’s transfer plan and adjust (as necessary) in coordination with the releasing RFSD office and the acquiring CHDO.</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Identify and allocate resources, staffing, and training for the acquiring CHDO.</td>
</tr>
</tbody>
</table>

### Phase 5—Acquiring CHDO Tasks

<table>
<thead>
<tr>
<th>Item</th>
<th>Initials/Date or N/A</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>Contact AFS-900 for support during the transfer process (as necessary).</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Review the certificate transfer plan and Certificate Transfer Process Job Aid and adjust (as necessary) in coordination with the acquiring RFSD office and the releasing CHDO.</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Verify that all open items and/or discrepancies were resolved.</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>Fill required positions for the CHDO.</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>Complete required training.</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>Update the certificate holder’s or applicant’s team roster in SAS.</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>Meet with the releasing CHDO and discuss the SAS work program. Review the CHAT risk indicators and the AAA.</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>After the CHDO is primarily responsible for oversight, review and revise the Certificate Holder Operating Profile (CHOP), CHAT, and CAP, and amend as appropriate (ensure adequate resources for the initial quarter).</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>Issue a new certificate holder certificate.</td>
</tr>
<tr>
<td>10</td>
<td></td>
<td>Transfer the new certificate in WebOPSS.</td>
</tr>
<tr>
<td>11</td>
<td></td>
<td>Verify that the eVID has been updated (refer to VPM).</td>
</tr>
<tr>
<td>12</td>
<td></td>
<td>Verify that all “Open” and “Planned” Program Tracking and Reporting Subsystem (PTRS) records are transferred.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Review all applicable OpSpecs.</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Update Master Minimum Equipment List (MMEL) user data.</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Forward a copy of completed Certificate Transfer Process Job Aid, certificate transfer plan, and appropriate documents to the acquiring RFSD office.</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Hold an introductory meeting with the certificate holder, the new CHDO OM, and office personnel.</td>
<td></td>
</tr>
</tbody>
</table>

Notes:

**Phase 6—Acquiring RFSD Office Final Tasks**

<table>
<thead>
<tr>
<th>Item</th>
<th>Initials/Date or N/A</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>Validate that all items on the Certificate Transfer Process Job Aid are complete.</td>
</tr>
</tbody>
</table>
| 2    |                      | Ensure administrative functions are completed including:  
- Personnel action, staffing, training, and assignments are complete.  
- Transfer of files from the releasing to the acquiring CHDO.  
- Entry of required PTRS records.  
- Update the eVID (refer to VPM).  
- Issue new operating certificate.  
- Revise and re-issue OpSpecs.  
- Revise office roster in the SAS automation.  
- Reviewed and revised the CAP, as appropriate. |
| 4    |                      | Notify appropriate AFS personnel. |
| 5    |                      | Complete certificate transfer documentation and provide a copy of the certificate transfer record to releasing and acquiring offices to include copies of the following:  
- Transfer Request/Notification.  
- Record (the releasing CHDO being briefed on the transfer).  
- Record (the acquiring CHDO being briefed on the transfer).  
- Discrepancies.  
- Discrepancy resolution.  
- Acquiring CHDO PI’s SAS training completion.  
- Completed Certificate Transfer Process Job Aid.  
- Completed Certificate Transfer Process.  
- Acquiring CHDO’s “N/A Report” from the Operations Research Analyst (ORA) and the CHAT/CAP report as of the official transfer date. |

Notes: