VOLUME 1 GENERAL INSPECTOR GUIDANCE AND INFORMATION

CHAPTER 1 HANDBOOK ORGANIZATION, USE, AND REVISION

Section 3 Safety Assurance System: Acronyms and Abbreviations

1-46 GENERAL. Many acronyms and abbreviations for both old as well as new aviation terms are used throughout this handbook. Inspectors can refer to the following alphabetical listing of frequently used acronyms and abbreviations and their meanings when using this handbook.

Table 1-1. Acronyms and Abbreviations

AAA	Analysis, Assessment, and Action
AC	Advisory Circular
ACARS	Aircraft Communications Addressing and Reporting System
ACDE	Air Carrier Designated Examiner
ACO	Aircraft Certification Office
AD	Airworthiness Directive
ADE	Aircrew Designated Examiner
ADF	Automatic Direction Finder
ADR	Advisory Route
ADS–B	Automatic Dependent Surveillance—Broadcast
AEG	Aircraft Evaluation Group
AEM	Area Equivalent Method
AES	Automated Exemption System
AFCGS	Automatic Flight Control Guidance System
A/FD	Airport/Facility Directory
AFE	Above Field Elevation
AFGS	Auto Flight Guidance System
AFM	Airplane Flight Manual
AFS-1	Director of Flight Standards Service
AFSS	Automated Flight Service Station
AFTN	Aeronautical Fix Telecommunications Network
AGC	Office of the Chief Counsel
AGL	Above Ground Level
AH	Alert Height for Category III Operations
AIA	Office of International Aviation
AIM	Aeronautical Information Manual
AIP	Aeronautical Information Publication
AIRMET	Airmen’s Meteorological Information
AITT	Action Item Tracking Tool
ALPA	Air Line Pilots Association International
AMM	Aircraft Maintenance Manual
AOPA	Aircraft Owners and Pilots Association
APD	Aircrew Program Designee

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APM	Aircrew Program Manager
APU	Auxiliary Power Unit
AQP	Advanced Qualification Program
ARA	Airborne Radar Approach
ARFF	Aircraft Rescue and Fire Fighting
ARINC	Aeronautical Radio, Inc.
ASA	Aviation Safety Assistant
ASAP	Aviation Safety Action Program
ASDE	Airport Surface Detection Equipment
ASHP	Aviation Safety and Health Program
ASI	Aviation Safety Inspector
ASOS	Automated Surface Observing System
ASR	Airport Surveillance Radar
AST	Aviation Safety Technician
ATA	Air Transport Association of America
ATC	Air Traffic Control
ATCO	Air Taxi Commercial Operator
ATD	Aviation Training Device
ATIS	Automatic Terminal Information Service
ATP	Airline Transport Pilot
ATS	Air Traffic Service
AUG	Automation User Guide
AVN	Aviation Standards National Field Office
AVS–1	Associate Administrator for Aviation Safety
AWOS	Automated Weather Observing System
AWTA	All Weather Terminal Area Operation
AXR–1	Executive Director for Standards and Compliance
AZI	Azimuth Instrument Approach
CAA	Civil Aeronautics Administration
CAB	Civil Aeronautics Board
CAD	Continuous ATOS Development
CAM	Civil Aeronautics Manual
CAMP	Continuous Airworthiness Maintenance Program
CAN	Center Area NOTAM
CAP	Comprehensive Assessment Plan
CAR	Civil Aviation Regulation
CBI	Computer-Based Instruction
C DCT	Custom Data Collection Tool
CDL	Configuration Deviation List
CDTI	Cockpit Display of Traffic Information
CDU	Control Display Unit
CEP	Central East Pacific
CFI	Certificated Flight Instructor
CFM	Company Flight Manual
CFR	Code of Federal Regulations

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CG	Center of Gravity
CHAT	Certificate Holder Assessment Tool
CHDO	Certificate-Holding District Office
CHEP	Certificate Holder Evaluation Process
CHOP	Certificate Holder Operating Profile
CIG	Component Inoperative Guide
CL	Centerline
CMO	Certificate Management Office
CMT	Certificate Management Team
CMU	Communications Management Unit
COS	Continual Operational Safety
CPDLC	Controller-Pilot Data Link Communication
CPM	Certification Project Manager
CPT	Certification Project Team
CRAF	Civil Reserve Air Fleet
CRM	Crew Resource Management
CSI	Cabin Safety Inspector
CSOP	Certification Service Oversight Process
CSP	Comprehensive Surveillance Plan
CTAF	Common Traffic Advisory Frequency
CVFP	Charted Visual Flight Procedures
DA	Density Altitude
DBA	Doing Business As
DCT	Data Collection Tool
DFEE	Designated Flight Engineer Examiner
DGPS	Differential Global Positioning System
DH	Decision Height
DIS	Dynamic Information System
DME	Distance Measuring Equipment
DNL	Decibel Noise Level
DO	Director of Operations
DOD	Department of Defense
DOL	Department of Labor
DOR	Dynamic Observation Report
DOT	Department of Transportation
DPA	Decision Point Altitude
DPE	Designated Pilot Examiner
DR	Dead Reckoning
DUAT	Direct User Access Terminal
DWFAF	Downwind Final Approach Position
EA	Environmental Assessment
EAP	Employee Assistance Program
EASA	European Aviation Safety Agency
EDA	Element Design Assessment
ED DCT	Element Design Data Collection Tool

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EFB	Electronic Flight Bag
EIR	Enforcement Investigation Report
EIS	Enforcement Information System
EIS	Environmental Impact Statement
EMP	Essential Maintenance Provider
EMS/A	Emergency Medical Services/Airplane
EPA	Element Performance Assessment
EP DCT	Element Performance Data Collection Tool
EPR	Exhaust Pressure Ratio
ER–OPS	Extended-Range Operations
ERC	Event Review Committee
ERT	Extended Review Team
ETA	Estimated Time of Arrival
ETE	Estimated Time En Route
ETOPS	Extended Operations
eVID	Enhanced Vital Information Database
EWINS	Enhanced Weather Information System
F/A	Flight Attendant
FA	Forecasts Area
FA Act	Federal Aviation Act of 1958
FAA	Federal Aviation Administration
FAF	Final Approach Fix
FAR	Federal Aviation Regulations
FBO	Fixed-Base Operator
FD	Flight Director
FDE	Fault Detection and Exclusion
FE	Flight Engineer
FIAO	Flight Inspection Area Office
FIFO	Flight Inspection Field Office
FIR	Flight Information Region
FL	Flight Level
FMF	Flight Movement Forecast
FMRB	Flight Manual Review Board
FMS	Flight Management System
FOD	Foreign Object Damage
FOEB	Flight Operations Evaluation Board
FOIA	Freedom of Information Act
FONSI	Finding of No Significant Impact
FOPB	Flight Operations Policy Board
FOPM	Flight Operations Policy Manual
FSAIC	Flight Standards Safety Analysis Information Center
FSAS	Flight Standards Automation System
FSAT	Flight Standards Information Bulletin for Air Transportation
FSB	Flight Standardization Board
FSDO	Flight Standards District Office

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FSIB	Flight Standards Information Bulletin
FSIS	Flight Standards Information System
FSNFO	Flight Standards National Field Office
FSS	Flight Service Station
FT	Forecast Terminal
FTD	Flight Training Device
FTE	Flight Technical Error
GCNP-SFRA	Grand Canyon National Park-Special Flight Rules Area
GLS	GPS Landing System
GMM	General Maintenance Manual
GNSS	Global Navigation Satellite System
GOM	General Operations Manual
GPS	Global Positioning System
GS	Groundspeed
GSGC	Ground School Graduation Certificate
GTD	Ground Training Device
HAA	Height Above Airport (nonprecision approach)
HAT	Height Above Touchdown (precision approach)
HAZMAT	Hazardous Materials
HBAT	Handbook Bulletin for Air Transportation
HEDA	Helicopter En Route Descent Area
HEMES	Helicopter Hospital Emergency Medical Evacuation Service
HF	High Frequency (3 to 3 MHz)
HGS	Heads-Up-Guidance System
HIRL	High Intensity Runway Light
HMR	Hazardous Material Regulation
HQ	Headquarters
HUD	Head-Up Display
IAF	Initial Approach Fix
IAP	Instrument Approach Procedure
IAS	Indicated Airspeed
IATA	International Airport Transport Association
IAW	In Accordance With
ICA	Instructions for Continued Airworthiness
ICAO	International Civil Aviation Organization
IFO	International Field Office
IFR	Instrument Flight Rules
ILS	Instrument Landing System
IM	Inner Marker
IMC	Instrument Meteorological Conditions
INM	Integrated Noise Model
INS	Inertial Navigation System
IOC	Initial Operational Capability
IOE	Initial Operating Experience
IRA	Instrument Rating Airplane

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IRS	Inertial Reference System
IRU	Inertial Reference Units
ISARP	International Standard and Recommended Practice
ISIS	Integrated Safety Information Subsystem
JAD	Job Aid Disc
JTA	Job Task Analysis
Km	Kilometer
LAN	Local Area Network
LAWRS	Limited Aviation Weather Reporting Station
LDA	Localizer-Type Directional Aid
Lf	Low Frequency (30 to 300 kHz)
LIRL	Low Intensity Runway Light
LLWS	Low-Level Wind Shear
LNAV	Lateral Navigation
LOA	Letter of Authorization
LOE	Line Operational Evaluation
LOFT	Line-Oriented Flight Training
LOI	Letter of Investigation
LOP	Line of Position
LOS	Line-Operational Simulation
LRA	Lowest Radar Altitude
MAP	Missed Approach Point
MCT	Maximum Continuous Thrust
MDA	Minimum Descent Altitude (nonprecision approach)
MDPR	Master Differences Program Requirement
MEL	Minimum Equipment List
MF	Medium Frequency
MHz	Megahertz
MID	Mid Runway Rollout
MIDO	Manufacturing Inspection District Office
MIRL	Medium Intensity Runway Light
MNPS	Minimum Navigation Performance Specification
MOU	Memorandum of Understanding
MRB	Maintenance Review Board
MSG	Maintenance Steering Group
MSL	Mean Sea Level
MTOW	Maximum Takeoff Weight
NADP	Noise Abatement Departure Profile
NAO	Noise Abatement Officer
NAS	National Airspace System
NASA	National Aeronautics and Space Administration
NAT	North Atlantic Track
NATA	National Air Transportation Association
NAT/OPS	North Atlantic Operation
NAVAID	Navigational Aid

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NDB	Non-Directional Radio Homing Beacon
NEPA	National Environmental Policy Act of 1969
NFDC	National Flight Data Center Office of the Asst. Secretary of Defense
NFDD	National Flight Data Digest
NM	Nautical Mile
NOAA	National Oceanic and Atmospheric Administration
NOPAC	North Pacific
NOS	National Ocean Service
NOTAM	Notice to Airmen
NPG	National Program Guidelines
NPRM	Notice of Proposed Rulemaking
NSPM	National Simulator Program Manager
NST	National Standardization Team
NTSB	National Transportation Safety Board
NWS	National Weather Service
OAT	Outside Air Temperature
OC	Obstruction Chart
OCA	Obstacle Clearance Altitude
OCH	Obstacle Clearance Height
OCL	Obstacle Clearance Limit
ODS	Obstruction Data Sheet
OE	Operating Experience
OIG	DOT Office of the Inspector General
OJT	On the Job Training
OpSpecs	Operations Specifications
ORA	Operations Research Analyst
OSAP	Offshore Standard Approach Procedure
OSHA	Occupational Safety and Health Administration
OST	Office of the Secretary of Transportation
OTNA	Operational Training Needs Assessment
PA	Performance Assessment
PAI	Principal Avionics Inspector
PANS–OPS	Procedures for Air Navigation Services Aircraft Operations
PAR	Precision Approach Radar
PASI	Preapplication Statement of Intent
PASS	Professional Airways Systems Specialists
PATCO	Professional Air Traffic Controllers Organization
PATWAS	Pilots Automatic Telephone Weather Answering Service
PCA	Positive Control Area
PCB	Production Certification Board
PF	Pilot Flying
PIC	Pilot in Command
PIREP	Pilot Weather Report
PKI	Public Key Infrastructure
PMI	Principal Maintenance Inspector

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PMMEL	Proposed Master Minimum Equipment List
PNF	Pilot-Not-Flying
POI	Principal Operations Inspector
POM	Pilot Operating Manual
PPM	Partial Program Manager
PRD	Planned Redispatch
PRIA	Pilot Records Improvement Act of 1996
PRM	Precision Runway Monitor
PRR	Planned Rerelease
PSI	Principal Security Inspector
PTRS	Program Tracking and Reporting Subsystem
PTS	Practical Test Standards
QICP	Qualified Internet Communications Provider
RAA	Regional Airline Association
RAIM	Receiver Autonomous Integrity Monitoring
RCH	Runway Crossing Height
RCLM	Runway Centerline Marking
RFM	Rotorcraft Flight Manual
RFSD	Regional Flight Standards Division
RFT	Recurrent Flight Training
RMA	Radar Minimum Altitude
RMP	Risk Management Process
RNAV	Area Navigation
RNP	Required Navigation Performance
ROC	Regional Operations Center
RSI	Remotely Sited Geographic Aviation Safety Inspector
RTCA	Radio Technical Commission for Aeronautics
RVO	Runway Visibility by Observer
RVR	Runway Visual Range
RVSM	Reduced Vertical Separation Minimum
RVV	Runway Visibility Value
RWBC	Regional Whistleblower Coordinator
SA	Selective Availability
SAFE	Aviation Safety Analysis and Functional Evaluation
SARA	Special Airport/Route Authorization
SAS	Safety Assurance System
SASO	System Approach for Safety Oversight
SAT	System Analysis Team
SATCOM	Satellite Communication
SAWRS	Supplementary Aviation Weather Reporting Station
SDE	School Designate Examiner
SEC	Special Enforcement Consideration
SEIFR	Single Engine Instrument Flight Rules
SFAR	Special Federal Aviation Regulations
SIAP	Standard Instrument Approach Procedure

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SIC	Second-in-Command
SID	Standard Instrument Departure
SIGMET	Significant Meteorological Information
SIM	Flight Simulator
SIP	Surveillance Improvement Process
SLRCS	Single Long-Range Communication System
S-LRNS	Single Long-Range Navigation System
Sm	Statute Mile
SMGCS	Surface Movement Guidance and Control System
SMS	Safety Management System
SOE	Supervised Operating Experience
SPAS	Safety Performance Analysis System
SP DCT	System/Subsystem Performance Data Collection Tool
SPO	Supporting Proficiency Objectives
SPOT	Special Purpose Operational Training
SRR	Specific Regulatory Requirement
STAR	Standard Terminal Arrival Route
STC	Supplemental Type Certificate (or Certification)
STOL	Short Takeoff and Landing
SVT	Single-Visit Training
SYSOP	Systems Operator
TACAN	Tactical Air Navigational Aid
TAS	True Airspeed
TBD	To Be Developed
TC	Type Certificate
TC	Team Coordinator
TCAS	Traffic Alert and Collision Avoidance System
TCDS	Type Certificate Data Sheet
TCE	Training Center Evaluator
TCH	Threshold Crossing Height
TCO	Training Course Outline
TCPM	Training Center Program Manager
TDZ	Touchdown Zone
TERPS	Terminal Instrument Procedures
TLS	Transponder Landing System
TPO	Terminal Proficiency Objectives
TSA	Transportation Security Administration
TSO	Technical Standard Order
TWEB	Transcribed Weather Broadcast
UHF	Ultrahigh Frequency (300 MHz to 3 GHz)
UNICOM	Aeronautical Advisory Station
U.S.C.	United States Code
USNOF	United States NOTAM Office
UTC	Universal Coordinated Time
VASI	Visual Approach Slope Indicator

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VERTOL	Vertical Takeoff and Landing
VFR	Visual Flight Rules
VHF	Very High Frequency (30 to 300 MHz)
VLF	Very Low Frequency
VMC	Visual Meteorological Conditions
VNAV	Vertical Navigation
VPN	Virtual Private Network
VOR	Very High Frequency Omnidirectional Range
VOR/DME	Very High Frequency Omnidirectional Range/Distance Measuring Equipment
VORTAC	VHF Omnidirectional Range Station/Tactical Air Navigation
VSI	Vertical Speed Indicator
WAAS	Wide Area Augmentation System
WBPP	Whistleblower Protection Program
WebOPSS	Web-based Operation Safety System

RESERVED. Paragraphs 1-47 through 1-60.

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VOLUME 2 AIR OPERATOR AND AIR AGENCY CERTIFICATION AND APPLICATION PROCESS

CHAPTER 1 THE GENERIC PROCESS FOR CERTIFICATING ORGANIZATIONS

Section 1 Safety Assurance System: General Information and the Certification Process

2-1 GENERAL INFORMATION. The purpose of the certification process is to provide a means by which prospective air operators or air agencies, other than Title 14 of the Code of Federal Regulations (14 CFR) parts 121, 135, and 145, are authorized to conduct business in a manner which complies with all applicable regulations, the Federal Aviation Act of 1958 (FA Act), and Federal Aviation Administration (FAA) directives. The process is designed to preclude the certification of applicants who are unwilling or unable to comply with the regulations, or to conform to safe operating practices.

2-2 GUIDANCE FOR THE PROCESS. This chapter delineates the certification process in detail. It standardizes the process and replaces previous guidance, including regional supplements. This section does not apply to parts 121, 135 and 145.

2-3 CERTIFICATION INTRODUCTION. The following guidance will result in the operator's compliance with the FA Act and applicable regulations. The applicant will not be certificated until the certificate-holding district office (CHDO) is assured that the applicant is capable of complying with the regulations.

2-4 THE CERTIFICATION PROCESS. The certification process is a series of steps outlined in five phases:

- Preapplication;
- Formal Application;
- Document Compliance;
- Demonstration and Inspection; and
- Certification.

A. Inspector Assessment. The complexity of the certification process is based on the inspector's assessment of the applicant's proposed operation. For simple certifications, some steps can be condensed or eliminated.

B. Differences Among Applicants. Some applicants may lack a basic understanding of what is required for certification. Other applicants may propose a complex operation, but be well prepared and knowledgeable. Because of the variety in proposed operations and differences in applicant knowledge, the process must be thorough enough and flexible enough to apply to all possibilities.

2-5 PHASE ONE—PREAPPLICATION. Initial inquiries about or requests for an application for an air operator or air agency certificate may come from individuals or organizations and may be in writing or in the form of informal meetings with district office personnel.

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A. Initial Inquiry. During the initial contact, the applicant will usually have specific questions about the certificate requirements.

1) The aviation safety inspector (ASI) should explain to the applicant all appropriate requirements and discuss pertinent parts of 14 CFR and advisory circulars (AC). The ASI should tell the applicant how to obtain current copies of these documents and explain that the applicant should review them carefully before filling out an application.

a) At this point, the ASI should determine if the applicant is sufficiently aware of the certification requirements. If the applicant wishes to continue with the process, the ASI will provide the applicant with copies of the appropriate application form. The ASI should explain that once an application is received, further notification regarding the application status is done using the Certification Service Oversight Process (CSOP).

b) The ASI should explain that during the certification process the applicant will receive a computer-generated number. Obtaining certificate numbers is covered in Volume 2, Chapter 1, Section 3. The applicant will not receive this number until the appropriate stage in CSOP. It's possible they could be waitlisted (no work performed for this application) due to availability of FAA resources.

2) If the applicant is proposing a complex operation (i.e., a large number of complex aircraft or an operation conducted in several district office jurisdictions) or seems unclear about the specific requirements, the ASI may ask the applicant to describe the intended operation in writing.

a) Applicants for part 125 and 14 CFR part 133 certificates are provided FAA Form 8400-6, Preapplication Statement of Intent (PASI).

b) Applicants for a part A125 Letter of Deviation Authority (LODA) do not use a PASI Form 8400-6 and are not entered in the Flight Standards Service (AFS) CSOP process.

B. Certification Team Assignment. The district office manager will assign sufficient ASIs to a certification team. One team member will be designated as a certification project manager (CPM). The CPM will not only coordinate certification matters with the applicant, but will also ensure that the unit supervisor is kept fully informed of the project's current status (e.g., during staff meetings). Team members must strive at all times to maintain a professional and responsive relationship with the applicant. From the time of its appointment, the certification team handles all matters pertaining to the applicant, regardless of whom the applicant initially contacted.

C. CPM Qualifications, Duties, and Responsibilities. For appointment as a CPM, experience as a principal inspector (PI) is desirable. However, other inspectors are acceptable depending on the situation and at the discretion of the district office manager. The duties and responsibilities of the CPM include the following:

1) The CPM coordinates certification matters with the applicant and ensures that the unit supervisor is kept fully informed of the project's current status.

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2) The CPM serves as the primary contact with the applicant. The CPM ensures each certification task is completed in an acceptable and timely manner, and that all certification matters are thoroughly coordinated with each team member.

3) The CPM schedules and conducts preapplication and formal application meetings with the applicant.

4) The CPM notifies the unit supervisors and district office manager of any information that may significantly impact or delay certification, or that may attract media or political interest. Periodic meetings will ensure that everyone concerned is kept informed of the status of the certification. If the CPM cannot attend a scheduled meeting, the CPM appoints a team member to act as CPM.

D. Preapplication Meeting. If, after its assignment to the project, the certification team has determined that a preapplication meeting is necessary, the CPM or team leader (TL) shall contact the applicant to arrange the meeting as soon as practicable.

1) The meeting should include, but not be limited to, the following:

- A review of the PASI or LOI to verify that all information is complete and accurate;
- A review of applicable 14 CFR parts and ACs (and how to obtain them, if not already accomplished);
- A review and discussion of the certification procedures to ensure that the applicant understands what is expected;
- A review of what is required on the application, and what is to be submitted with the application;
- Provision of a certification job aid to the applicant; and
- An indication of which ASIs will conduct which aspects of the certification.

2) Operator certification tasks throughout Volume 2 of this order provide guidance on preapplication meetings for the different types of air operator or air agency certificates.

E. Terminating the Preapplication Phase. The Preapplication Phase ends when the certification team is satisfied that the applicant is prepared to proceed with formal application. If the applicant is not ready, the team should advise the applicant of the problems and work with the applicant to arrive at solutions or terminate the certification process.

F. Initial Inquiry. During the initial contact, the applicant may have specific questions about the requirements for the type of certificate in which the applicant is interested.

G. District Office. If necessary, refer the applicant to the correct district office.

2-6 PHASE TWO—FORMAL APPLICATION. An applicant's presentation of an application package and the district office's review of it is considered the Formal Application Phase.

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A. Receipt of Formal Application Package. On receipt of the formal application package, the applicant will be informed that the FAA needs a specific period of time to review it. Discussions of its acceptability should be avoided at this time. The applicant should be advised that further discussion will not be productive until the certification team has reviewed the formal application. The applicant should be advised that the certification team will contact him/her within 5 business days concerning the application package's acceptability, and to arrange for a formal application meeting. A formal application meeting is arranged only if the team determines there is a need for the meeting.

B. Application Package Initial Review. Upon receipt of a formal application package, the certification team must initially review it and make a determination of its acceptability. The package generally consists of:

- Copies of the application form (or letter of formal application for a part 125 applicant);
- Documentation that the applicant has or can obtain use of an aircraft and appropriate facilities, if applicable;
- Any partial or complete manuals, if applicable;
- Curricula or personnel training programs, if applicable; and
- A Schedule of Events (SOE).

1) For a part 125 certification, a SOE must be submitted with the application. However, for 14 CFR part 133, 137, 141, 142, and 147 applicants, a SOE is necessary only for an applicant who proposes a large operation where multiple meetings and demonstrations may be required. It is up to the certification team to determine if the applicant's proposed operation warrants a SOE.

2) If a SOE is requested from the applicant, the certification team must consider the feasibility of the proposed schedule with respect to logic of sequence, timeliness of events, completeness of events, and inspector availability. Sample SOEs for each type of certification are found in applicable chapters of Volume 2.

a) Many of the activities or events listed in the schedule must occur before other activities or events.

b) The SOE must provide realistically sufficient time for the certification team to review the applicant's various documents, manuals, and proposals.

c) The number of and kinds of submissions made by the applicant for evaluation and acceptance or approval may vary according to the complexity of the proposed operation.

d) A concern in meeting the SOE is inspector availability.

e) Sufficient, qualified inspectors must be available to ensure timely completion of the steps in the certification process.

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C. Formal Application Meeting. If the certification team determines the need for a formal application meeting, all members of the certification team must be present. During the meeting, the certification team and the applicant review the application package and resolve any discrepancies.

1) If mutual agreements cannot be reached on any discrepancies, the team should terminate the meeting and inform the applicant that the application package is not acceptable. The application package must then be returned to the applicant with a letter explaining the reasons for the rejection.

2) When an agreement has been reached on corrective action for deficiencies, the team should then encourage the applicant to present questions concerning the certification.

3) Before the conclusion of the formal application meeting, the team must make certain the applicant clearly understands the following:

a) The applicant will be notified in writing in the event the application is rejected. This notification should be made within 5 business days after the formal application meeting. A telephone call concerning the application rejection shall be made to the applicant as soon as the determination is made, indicating that written notification will follow.

b) If the application is acceptable, the certification process continues with an in-depth examination of the application and associated documents during the document compliance phase. In some cases, telephone confirmation to the applicant is sufficient; written confirmation is recommended. A letter accepting an application is necessary because the 60-day time limit begins upon receipt of the application in an acceptable form.

c) Acceptance of the application does not constitute acceptance or approval of any attached documents. Attachments will be reviewed, and the applicant will be expected to take corrective action, if required. Acceptance or approval of each attachment should be indicated separately.

D. Application Rejection. Rejection of an application is a sensitive issue since the applicant may have already expended funds and resources. It is important for the team to document thoroughly the reasons for the rejection. The reasons should clearly indicate that to proceed with the certification process would not be productive unless the applicant is willing to make the team's suggested corrections. Reasons for rejection might include lack of agreement on appropriate courses of action, or evidence that the applicant does not understand regulatory requirements and the certification process. In the event of rejection, the application and documents submitted are returned to the applicant with a letter of rejection.

E. Terminating the Formal Application Phase. If the certification team accepts the application package, the Formal Application Phase of the certification process ends, and the Document Compliance Phase begins.

2-7 PHASE THREE—DOCUMENT COMPLIANCE. The document compliance phase is that part of the certification process where the applicant's manuals and other documents are

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reviewed and either approved or rejected. The certification team usually conducts this phase in the district office.

A. Approval or Acceptance of Documents. During the Document Compliance Phase of the certification process, attached documents are approved or accepted. After initial certification, revisions or amendments to these documents may also be submitted for approval or acceptance. The team must determine which documents are approved and which are accepted.

1) Documents that require FAA approval are specifically listed in the regulations. Other documents are accepted; however, not all other documents must be accepted.

2) Documents submitted for acceptance should relate to areas which are safety related or in which the FAA has a significant interest.

3) Some documents submitted for approval or acceptance may require coordination with other organizations within the FAA.

4) Operating manuals may require approval by operations, maintenance, and avionics. CPMs must ensure that all appropriate approvals have been obtained before certification.

5) It may be necessary to approve a document in segments, or indicate initial approval pending other required events. An initial approval should not continue for an extended period of time. The CPM should establish a plan to evaluate deficiencies and to document reasons for not granting final approval.

B. Approval Documentation. When all requirements and standards have been met, the operator should be notified that the documents have been approved. The approving inspector indicates approval.

C. Acceptance Documentation. Documents that are submitted for acceptance by an operator or applicant are accepted with a letter of confirmation from the CPM or appropriate PI.

D. Revisions or Amendments. When an approved or accepted document is revised or amended, only that portion affected by the proposed change needs to be evaluated, provided there is no effect on other portions or other documents.

E. Required Documents. The required documents vary with the type of certificate applied for. Details for each certificate type's required documents are within Volume 2.

- Title 14 CFR part 91K—Chapter 5, Section 2, paragraph 2-557;
- Part 91K—Chapter 5, Section 4, paragraphs 2-596 and 2-597;
- Part 125—Chapter 6, Section 2, paragraph 2-681;
- Part 133—Chapter 7, Section 1, paragraph 2-936;
- Part 137—Chapter 8, Section 1, paragraphs 2-971 and 2-979;
- Part 141—Chapter 9, Section 1, paragraph 2-1071;
- Part 142—Chapter 10; and

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- Part 147—Chapter 12, Section 1, paragraph 2-1416.

F. Unacceptable Documents. If any of the documents are unacceptable, they are returned to the applicant. The team sends the applicant a letter of rejection stating the reasons for rejection and recommendations for obtaining approval.

G. Applicant Profile. The team obtains a profile of the applicant and personnel using the Enforcement Information System (EIS) and the Accident Incident Data System (AIDS). This profile may determine if the certification process should continue.

H. Completing the Document Compliance Phase. When required documents are approved or accepted, the Document Compliance Phase is completed. The certification process continues in the Demonstration and Inspection Phase. The Document Compliance Phase and the Demonstration and Inspection Phase may overlap.

2-8 PHASE FOUR—DEMONSTRATION AND INSPECTION. In the Demonstration and Inspection Phase, the certification team inspects the applicant's facilities and equipment, and observes personnel in the performance of their duties. Emphasis in this phase is on compliance with regulations and safe operating practices.

A. Regulatory Compliance. During the evaluation, the team shall determine the applicant's ability to comply with all applicable sections of the regulations.

B. Determination of Approval or Disapproval. Throughout the demonstration and inspection phase, the team ensures that all aspects of the applicant's required demonstrations are observed and that a determination of approval or disapproval for each is made.

C. Handling Deficiencies. If the applicant's activities or other items are deficient, appropriate corrective action must be taken. If the deficiencies cannot be corrected, the team should advise the applicant that it is impractical to continue the certification process.

D. Specific Guidance. Specific guidance for this phase of each certificate type is within Volume 2.

- Part 91K—Chapter 5, Section 5;
- Part 125—Chapter 6, Section 2, paragraph 2-682;
- Part 133—Chapter 7, Section 1, paragraph 2-937;
- Part 137—Chapter 8, Section 1, paragraphs 2-972 and 2-980;
- Part 141—Chapter 9, Section 2, paragraphs 2-1101 and 2-1102 and Section 3, paragraph 2-1129;
- Part 142—Chapter 10; and
- Part 147—Chapter 12, Section 1, paragraph 2-1417, and Section 3, paragraphs 2-1480 through 2-1484 and paragraph 2-1487.

E. Unsatisfactory Demonstration. If a demonstration of compliance is unsatisfactory, the certification team must discuss with the applicant how to correct the problem. Reinspection should be scheduled as necessary. The team may follow up with a letter indicating the nature of

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the failure and its corrective action. Deficiencies must be corrected before the process can continue.

F. Satisfactory Demonstrations. If the applicant's demonstrations are satisfactory, the certification team issues appropriate documentation.

G. Terminating the Demonstration and Inspection Phase. When all demonstrations are satisfactorily completed, the Demonstration and Inspection Phase is ended, and the applicant is ready for issuance of the certificate.

2-9 PHASE FIVE—CERTIFICATION.

A. Obtaining Certificate Numbers. The CPM is responsible for ensuring that a certificate number is obtained from the AFS Aviation Data Systems Branch (AFS-620) in Oklahoma City, OK. An inspector on the certification team should telephone AFS-620 when a precertification number for a part 125 applicant or a certificate number is required.

1) Follow the procedures in Volume 2, Chapter 1, Section 3, for obtaining the certificate number. AFS-620 uses a systematic scheme for the construction of standard certificate numbers.

2) Part 125 certifications require the issuance of a precertification number. When the applicant is certificated as a part 125 operator, the inspector again contacts AFS-620 to change the "P" in the precertification number to a "B," signifying a part 125 operation.

B. Preparation of Certificate. The air operator or air agency certificate, as appropriate, is prepared for the manager's signature. The newly certificated operator cannot conduct any operations until the certificate is issued. The operator may elect to pick up the certificate from the district office in person, or it may be mailed to an address the operator specifies.

C. Certification File. The certification team assembles a certification file. The district office file shall include:

- A copy of the PASI or LOI, as appropriate;
- A copy of the application;
- A copy of the operator's certificate;
- A copy of any manuals or approved curricula;
- A copy of the completed certification job aid, if applicable;
- A copy of the operations specifications (OpSpecs), if applicable;
- A summary of any difficulties encountered during any phase of the certification or recommendations for future surveillance (Certification Report);
- EIS and AIDS profiles for the applicant and the pilots;
- Copies of leases, agreements, and contracts, if applicable;
- Compliance statement, if applicable; and
- Any correspondence between the applicant and the FAA.

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D. Postcertification Surveillance Plan. After the air operator or air agency is certificated, the certification team establishes a postcertification plan using the National Work Program Guidelines (NPG) as a basis for inspection and surveillance.

1) When developing the postcertification plan, the certification team may direct additional surveillance during the first few months the operator is in business.

2) The team is responsible for assembling a Certification Report, including the names and titles of each team member. The report shall be signed by the CPM and have a summary of difficulties, if any, encountered during the certification process, and any recommendations made by the team. This report may assist in preparing surveillance plans. (See Figures 2-1 through 2-4.)

Figure 2-1. Certification Report—Part 125

CERTIFICATION REPORT

PART 125

[Name and Address]

Certificate Number: AAAB001A

The certification team consisted of Edward Pendleton, principal operations inspector (POI); Margaret Pelham, principal maintenance inspector (PMI); and James Madison Eastham, principal avionics inspector (PAI).

The above operator applied for certification on 1/15/97 and was certificated on 3/15/97.

Of the four pilots in command (PIC) who applied for the qualification, two (Captain Stevens and Captain Cartwright) failed their first tests. In both cases deficient areas were identified:

1) The methods used for circling approaches placed the aircraft too far from the airport because of incorrect aircraft speed and configuration.

2) Failure to use the co-pilot during circling approaches which placed the aircraft in a position that would not allow the captain to observe the airport environment.

3) Not observing sterile cockpit procedures below 10,000 feet.

4) Failure to be able to identify hazardous materials (hazmat).

5) Failure to use company established standard call-outs by the pilot not flying.

Although the crew stated that training was covered in these problem areas, it was evident that there was not enough emphasis placed upon them during the training of pilot flight crewmembers. The crew was given additional training. Both captains Stevens and Cartwright passed their PIC check on the second try.

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The company procedure to identify hazmat is to carry a copy of Title 49 of the Code of Federal Regulations (49 CFR) aboard the aircraft, and to refer to it when questionable cargo comes to the attention of any crewmember or ground person. Neither captains Stevens nor Cartwright were able to identify whether or not three different types of suspected materials were controlled by 49 CFR. Retesting in this area indicated adequate knowledge.

It is recommended that during the postcertification phase emphasis is placed on pilot/crew training and testing.

[Certification Project Manager] [Date]

Figure 2-2. Certification Report—Part 133

CERTIFICATION REPORT

PART 133

[Name and Address]

Certificate Number: BBBL001B

The certification team consisted of Edward Pendleton, principal operations inspector (POI); Margaret Pelham, principal maintenance inspector (PMI); and James Madison Eastham, principal avionics inspector (PAI).

The above operator applied for certification on 1/15/97 and was certificated as an External Load Operator on 3/15/97.

The company operates one Bell 206 helicopter, a BK-117, and a Sikorsky SK-64, and employs four pilots, two aircraft crewmembers, and five trained external load ground personnel.

During the Bell 206 class B external load skill demonstration by pilot P. Stevens, it was noted that he was unable to release the load combination manually. Further inspection revealed that the release mechanism was inoperative, and that it may not have been properly serviced in accordance with the FAA's Approved Rotorcraft-Load Combination Flight Manual (RLCFM) procedure. The device was repaired and returned to service by a company mechanic, and the test was continued.

Pilot flight crews had not established procedures for determining 12-month currency for class D external loads. A procedure was established by each of them.

It is recommended that emphasis is placed on these items during the postcertification phase of inspector activity.

[Certification Project Manager] [Date]

Figure 2-3. Certification Report—Part 137

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CERTIFICATION REPORT

PART 137

[Name and Address]

Certificate Number: BBBG001B

The certification team consisted of Edward Pendleton, principal operations inspector (POI); Margaret Pelham, principal maintenance inspector (PMI); and James Madison Eastham, principal avionics inspector (PAI).

The above operator applied for certification on 1/15/97 and was certificated as an Agricultural Aircraft Operator on 3/15/97. The company operates one Bell 47G3B-2A helicopter, an Aero Commander Snow, and three Grumman AgCats. The company employs four pilots and five trained ground loader personnel.

During the helicopter pilot skill demonstration (§ 137.19(e)) by pilot John W. Slade, it was noted that the aircraft had a leaky spray nozzle. Further inspection revealed that the nozzle mechanism was probably inoperative before the flight. The device was repaired and returned to service by a company mechanic, and the test was satisfactorily completed. This type of operation could result in noncompliance with regulations if not noticed and corrected by the operator.

Although the helicopter is equipped with shoulder harnesses, it became apparent during the skill test that Mr. Slade may have a tendency not to wear his shoulder harness. This was concluded as a result of the team leader (TL) observing the shoulder belts neatly tucked away behind the pilot seat back immediately after the aircraft was landed at the duster strip.

It is recommended that emphasis is placed on these items during the postcertification phase of inspector activity.

[Certification Project Manager] [Date]

Figure 2-4. Certification Report—Part 141

CERTIFICATION REPORT

PART 141

[Name and Address]

Certificate Number: BBBV001B

The certification team consisted of Edward Pendleton, principal operations inspector (POI); Margaret Pelham, principal maintenance inspector (PMI); and James Madison Eastham, principal avionics inspector (PAI).

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The above operator applied for certification on 1/15/97 and was certificated as a Pilot School on 3/15/97.

The company operates three Cessna 152 aircraft, one Cessna 182, and one Cessna 182RG. They employ two full-time instructors, Mr. Craig Adams and Mr. Phil Johnston. Mr. Adams also serves as the chief flight instructor for all courses, and Mr. Johnston is his assistant. Both meet the experience requirements to serve in their respective capacities.

Course approvals are: Private Pilot Certification Airplane Single-Engine Land (ASEL); Commercial Pilot Certification ASEL; and Instrument Rating Airplane (IRA).

The training course outlines (TCO) presented for approval by the school were previously approved at Addison Aviation Inc. and modified with the company name. Mr. Adams and Mr. Johnson were cautioned to ensure that the TCO is followed and that each student's participation is properly documented. Because this is a new pilot school, future surveys and inspections should place emphasis in this area.

During the certification inspection, discrepancy logs were not available for each aircraft to document any equipment deficiency so that it could be brought to the attention of airworthiness personnel. When this was brought to Mr. Adams' attention, he devised a form that would serve such a purpose and placed it on the clipboard along with the tach sheet. Future surveys should include a check of the aircraft discrepancy log for write-ups and corrective actions.

It is recommended that emphasis is placed on these items during the postcertification phase of inspector activity.

[Certification Project Manager] [Date]

RESERVED. Paragraphs 2-10 through 2-25.

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VOLUME 2 AIR OPERATOR AND AIR AGENCY CERTIFICATION AND APPLICATION PROCESS

CHAPTER 4 THE CERTIFICATION PROCESS—TITLE 14 CFR PART 135

Section 6 Safety Assurance System: Single-Pilot, Single Pilot-in-Command, and Basic Part 135 Operations

2-456 GENERAL. This section provides direction and guidance to inspectors for the certification of Title 14 of the Code of Federal Regulations (14 CFR) part 135 operators of limited size and scope who are not required to comply with all regulatory requirements for manuals, training programs, and management positions. These operators normally need less extensive manuals or training programs and will have fewer management positions than more complex part 135 operators. However, these operations will not be permitted a reduction in safety standards due to their limited size and scope. See Volume 2, Chapter 4, Section 1, Safety Assurance System: Phase 1—Preapplication, paragraph 2-342 for specific part 135 definitions.

2-457 CERTIFICATION PROCESS. Processing applications for certificates to conduct single-pilot, single pilot-in-command (PIC), and basic part 135 operations will generally follow the same certification procedures as other applicants. Certification of these applicants may take less time since fewer documents, facilities, and other items require Federal Aviation Administration (FAA) evaluation. Applicable differences in the certification process for single-pilot, single PIC, and basic part 135 operators are discussed in this chapter.

2-458 SPECIAL AIRWORTHINESS CONSIDERATIONS. Any single-pilot, single PIC, or basic part 135 certificate holder may elect to maintain aircraft under part 135, § 135.411(a)(2). Maintenance programs under § 135.411(a)(2) require more extensive written procedures than those usually required for small operators by § 135.23. Compliance with § 135.411(a)(2) requires a more complex maintenance program and may require small operators to employ additional qualified management personnel. Therefore, regardless of the minimum standards for personnel and manuals established elsewhere in this section, Part D of the operations specifications (OpSpecs) authorizing aircraft maintenance under § 135.411(a)(2) shall not be issued to these types of operators unless the certificate-holding district office (CHDO) determines that the operator has appropriate personnel and manuals to provide adequate means of compliance with § 135.411(a)(2).

2-459 CERTIFICATION PROCESS DIFFERENCES FOR SINGLE-PILOT AND SINGLE PIC OPERATORS. This paragraph describes deletions, modifications, and additions to the certification process for single-pilot and single PIC applicants.

A. Differences in the Preapplication Phase.

1) In the Preapplication Statement of Intent (PASI) the applicant must state that the proposed operation will employ either one pilot or only one PIC. The applicant should enter this statement in item 10 of the PASI. A single PIC applicant must attach to the PASI a brief statement identifying regulations from which deviations will be requested (e.g., § 135.21, § 135.341). This statement will include the number of seconds in command (SIC) the applicant proposes to use.

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2) During the preapplication meeting, the content and scope of the initial compliance statement shall be established by the certification project manager (CPM). The CPM must ensure that an applicant clearly understands the level of detail expected in the initial and final compliance statements. The applicant may abbreviate the initial compliance statement, where appropriate. However, an initial compliance statement that does not clearly document an applicant's knowledge of regulatory requirements is unacceptable. The initial compliance statement (and later, the final compliance statement) provides the only written evidence of a single-pilot or single PIC operator's understanding of 14 CFR requirements. Simple, conventional requirements for a single-pilot operator using a four seat, single-engine airplane in day, visual flight rules (VFR)-only operations within the United States differ considerably from the requirements for a single-pilot operation using a Cessna 441 turboprop airplane in day and night, all-weather, international operations. In this example, part 135 does not require either operator to have manuals, training programs, or a full complement of management personnel. An examination of regulatory requirements that may apply to each operator's specific situation may reveal differences in the proposed types of operation, which would cause significant differences in the content and scope of the initial and final compliance statements. In the case of operators not required to maintain manuals in accordance with § 135.21, the compliance statement should be maintained and updated as regulations and operator configuration evolve.

3) The applicant's primary operations official and the single-pilot or single PIC (if different from the primary operations official) should attend the preapplication meetings. A person who is competent to discuss aircraft maintenance requirements for the applicant should also attend the meetings.

NOTE: For example, Akers Realty Corporation owns a Bell Jet Ranger helicopter and applies for a part 135 certificate. The individual with the authority to allow use of the helicopter is Mr. Bill Akers, vice president of sales. Mr. Terry Larson is the only pilot and Mr. Akers' sales manager. City Copters Inc., a fixed base operator, does the maintenance. In this situation, it would be appropriate for Mr. Akers, Mr. Larson, and a representative from the City Copters maintenance department to attend the preapplication meetings.

B. Differences in the Formal Application Phase.

1) Formal application attachments for company general manuals and company training curriculums are not required to be submitted with the formal application for a single-pilot applicant, nor the single PIC applicant if the single PIC applicant is requesting full deviations from §§ 135.21 and 135.341. For those single PIC applicants that are not requesting a full deviation from §§ 135.21 and 135.341, those sections shall be submitted.

2) For single-pilot and single PIC operators, attachments required to be submitted with the formal application are as follows:

- Schedule of Events (SOE);
- Documents of purchase, contracts, leases, and/or Letter of Intent (LOI);
- Initial compliance statement; and
- Management qualification résumés.

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3) The management qualification résumés are only required for the principal owner and company officers who are primarily responsible for operational control of the part 135 activities within the organization. The management résumés will provide assistance when determining compliance with 14 CFR part 119, § 119.69. Examples of management qualification résumés to be submitted for these applicants are described as follows:

a) A plastic products manufacturer based in Wilmington, DE, owns a King Air and applies for a certificate to operate under part 135. The company employs 1,400 people and has only one pilot. The company president has an office in New York City and keeps the plane in Wilmington, DE. The only person who can authorize use of the aircraft is the Wilmington plant manager. In this case, résumés are required for the president and the Wilmington plant manager.

b) Another example is the pilot/owner applicant when the pilot/owner will be the single-pilot or single PIC. In this situation, only the résumé of the pilot/owner is required.

C. Differences in the Design Assessment (DA) Phase. The differences are as follows:

1) Inspectors will evaluate any material submitted by applicants for acceptance or approval regardless of whether it is required. If, for example, a single PIC operator chooses to submit a complete General Operations Manual (GOM) rather than request a deviation, that manual must be evaluated and must meet the same criteria for acceptance as a required manual. The same would apply to training programs required under § 135.341, except that program requires approval rather than acceptance. Unacceptable submissions that are not corrected require denial of the application. It is irrelevant whether 14 CFR specifically requires the submitted material. The following items are not required by regulation for single-pilot operators and will not be evaluated unless the applicant chooses to develop and submit these items to the FAA:

- GOMs;
- General Maintenance Manuals (GMM), if appropriate; and
- Pilot training program curriculums.

2) Other documents and items required to be submitted during the document DA phase will be evaluated, including the following:

- The operator's flight-locating procedures (required by § 135.79); and
- Procedures to provide hazardous material (hazmat) training (required by part 135 subpart K).

D. Differences in the Performance Assessment (PA) Phase.

1) For single PIC operators, each SIC identified on the proposed certificate holder's OpSpecs must pass the entire check required by § 135.293 while occupying the normal SIC duty station (usually the right pilot seat in airplanes).

2) There are no differences in the PA phase for single-pilot operators. For example, a proposed operation may have only one person (this person may be the owner, pilot, and

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mechanic) who uses a single-engine airplane in day VFR operations. Evaluators will use the same careful process for the aircraft, facilities, equipment, records, and pilot/owner competency as the one used for a larger, more complex operator. Although the scope of the operation may require fewer demonstrations or inspections, every operator must meet the safety standards required by 14 CFR. Proving tests may be required by Volume 3, Chapter 29, Proving and Validation Tests.

E. Differences in the Administrative Function Phase.

1) Single-pilot or single PIC operators will be issued the appropriate standard OpSpec paragraph which identifies by name one individual authorized as the pilot or PIC. For single PIC operators, no more than three individuals shall be authorized as SICs.

2) A single PIC operator may be issued an OpSpec paragraph authorizing deviations from §§ 119.69(a), 135.21(a), and 135.341(a).

2-460 CONCEPT OF A BASIC PART 135 OPERATOR. Basic part 135 operators are limited in size and scope. This paragraph establishes conditions that an operator must meet to qualify as a basic part 135 operator and specifies the extent of authorized deviations from the manual, management personnel, and training program requirements of part 135. Basic part 135 operators are required to have management personnel, manuals, and training curriculums adapted to their smaller, less complex operations. Subparagraphs 2-465A through E discuss these requirements in detail. For classification as a basic part 135 operator, the operator must meet each of the following conditions and limitations:

- No more than five pilots, including SICs, are used in the operation;
- No more than five aircraft are used in the operation;
- No more than three different types of aircraft are used in the operation;
- No aircraft type certificated for more than nine passenger seats is used in the operation;
- No Category II (CAT II) or CAT III operations are conducted; and
- No operations are conducted outside the United States, Canada, Mexico, and the Caribbean (which includes the Bahamas).

2-461 CHECK PILOT APPROVAL FOR SINGLE-PILOT, SINGLE PIC, AND BASIC PART 135 OPERATORS.

A. Approval Despite Deviations. Recent experience indicates single PIC and basic part 135 operators who hold deviations granted by OpSpec paragraphs A037–A039 have demonstrated the management skills, organizational abilities, and good regulatory compliance record to warrant the appointment of check pilots.

B. Check Pilot Appointments. Check pilot appointments should be limited to only those operators who have demonstrated to the satisfaction of the assigned principal operations inspector (POI) all of the above important characteristics.

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1) "Single-pilot" operators may be granted approval to use a check pilot who is presently employed by another air carrier. The check pilot must be authorized to serve as a check pilot in the same make, model, and series (M/M/S) of aircraft. These operators are limited to one check pilot approval at any one time.

2) "Single PIC" operators may be granted approval to use a check pilot presently employed by another air carrier if the other air carrier operates the same M/M/S of aircraft and the check pilot is currently approved as a check pilot on that type of aircraft. The check pilot must also meet all the requirements of part 135 to serve as a check pilot. At the discretion of the POI, these check pilots may be authorized to give to both the single PIC and/or any of the SICs listed in paragraph A039 of the OpSpecs the proficiency or competency checks required by part 135. These operators are limited to one check pilot approval at a time.

3) "Basic 14 CFR Part 135 On-Demand Operations Only" and "Basic 14 CFR Part 135 Commuter and On-Demand" air carriers may be granted approval to use check pilots after receiving approval for a check pilot curriculum in their approved training programs.

NOTE: When approving check pilots for multiple operators, inspectors should see Volume 3, Chapter 20, Section 6, paragraph 3-20-6-23 for additional guidance.

4) For a basic part 135 operator-issued OpSpec paragraph A037, Basic 14 CFR Part 135 Operator—Commuter and On-Demand Operations, or A038, Basic Title 14 CFR Part 135 Operator—On Demand Operations Only, the following selections are required:

a) If no check pilot other than an Operating Experience (OE) check pilot is used for commuter operations, select OpSpec A037c(7).

b) For on demand operations only, if no check pilot is used, select OpSpec A038b(7).

c) Select the appropriate paragraph A037b(2)(a) or A038a(3)(a).

2-462 PROCEDURE FOR APPROVING DEVIATION FROM MANAGEMENT EXPERIENCE.

A. Initial Actions. When an operator requests approval for a deviation from the management experience requirements of § 119.71, the operator must specify the deviations requested and the justifications for them. The POI will review the certificate holder's request and follow the guidance found in Volume 2, Chapter 2, Section 3.

B. POI Responsibilities. When a deviation is approved under § 119.71(f), the POI will ensure that the operator notes the deviation in the appropriate section of the certificate holder's company manual. In addition, the CHDO will ensure that a record of the deviation is in OpSpec paragraph A005.

NOTE: During the annual review of the OpSpecs, the POI must determine currency and applicability of the deviations listed in OpSpec A005.

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2-463 DEVIATIONS FOR BASIC PART 135 OPERATORS. When an applicant meets the requirements for a basic part 135 operator, certain deviations from part 135 may be authorized. These deviations are as follows:

- Reduction in the content of the operator's manual (refer to § 135.21(a));
- Different management positions or different numbers of management positions (refer to § 119.69(a)); and
- Limited modification of training program requirements (refer to § 135.341(a)).

2-464 DELEGATION OF AUTHORITY TO APPROVE DEVIATIONS. The manager of the CHDO assigned certification responsibilities is authorized to approve deviations from §§ 119.71, 135.21(a), and 135.341(a) for a single PIC or basic part 135 operator applicant who proposes to conduct on-demand passenger, cargo-carrying operations, or scheduled cargo-carrying operations. The CHDO manager will process § 119.71 management deviation requests in accordance with Volume 2, Chapter 2, Section 3. If the CHDO manager grants a deviation to an operator for basic part 135, and subsequently that operator proposes to operate scheduled passenger carrying operations, the CHDO manager must forward this request to the Air Transportation Division (AFS-200) and the Aircraft Maintenance Division (AFS-300) for approval, as appropriate. Deviations from §§ 135.21(a) and 135.341(a) for a basic part 135 operator applicant who proposes to conduct scheduled passenger (commuter) operations must be forwarded to AFS-200 for approval.

2-465 LIMITATION OF AUTHORITY TO APPROVE DEVIATIONS.

A. Single PIC or Basic Part 135 Operator. The authority to approve deviations from §§ 119.69(a), 119.71, 135.21(a), and 135.341(a) for part 135 operators and applicants, other than scheduled passenger, is delegated to the CHDO manager.

B. Management Personnel. An approved deviation from the number of management positions required by § 119.69(a) will not be granted to any operator authorized to conduct scheduled passenger (commuter) operations. For additional information regarding part 119 management positions, see Volume 2, Chapter 2, Section 3.

C. Manual Content. All basic part 135 operators shall have a manual that includes at least the information required by the following sections of part 135. Deviation from the manual content requirements of these sections of part 135 is not authorized.

- Section 135.23(a)—Management personnel;
- Section 135.23(b)—Weight and balance;
- Section 135.23(c)—Information from OpSpecs;
- Section 135.23(e)—Airworthiness information;
- Section 135.23(f)—Recording mechanical irregularities;
- Section 135.23(g)—Recording corrective action for mechanical irregularities;
- Section 135.23(h)—Obtaining service and maintenance;
- Section 135.23(i)—Use of minimum equipment lists (MEL), if applicable;
- Section 135.23(j)—Fuel handling;
- Section 135.23(k)—Passenger briefing;

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- Section 135.23(l)—Flight locating; and
- Section 135.23(o)—Approved inspection program.

D. Training Program Requirements. Deviation from training program requirements of § 135.341(a) for basic part 135 operators is limited.

E. Approved Deviations. The only deviation that may be approved is authorization for a basic part 135 operator to have portions of its training conducted by another part 135 operator or a training organization that specializes in providing ground, simulator, and aircraft training.

1) The training organization must provide training equivalent to that required by part 135 subpart H. In all cases, the basic part 135 operator must train its personnel using only programs acceptable to the FAA and specifically authorized by the terms of the deviation. If a basic part 135 operator wishes to change any item in a training program that may affect the quality of training, the POI and the authorized manager must completely reexamine the authorization for deviation to avoid degrading operational standards.

2) The basic part 135 operator must provide to the FAA a written plan detailing how training will be implemented. The plan must accompany the request for deviation. A copy of the other part 135 operator's (or training organization's) curriculums must be attached to the plan. Before deviation is granted, the plan (and attached training curriculums) must be evaluated and accepted by the CPM or assigned POI, and the manager authorized to approve the deviation. Although these curriculums are not required to be "approved" in the same manner specified in Volume 3, Chapter 19, Training Programs and Airman Qualifications, they must specify training that equals the quality required for "approved" curriculums.

3) The written plan must include procedures for maintaining individual crewmember training records. The basic part 135 operator must maintain the records required by § 135.63. The plan must include provisions for certification of individual training records by the organization that conducts the training.

4) A basic part 135 operator must always prepare and keep current curriculum segments for basic indoctrination training (refer to § 135.329(a)(1)), Crew Resource Management (CRM) training (refer to § 135.330), and crewmember emergency training (refer to § 135.331). These curriculum segments will be evaluated and approved in accordance with Volume 3, Chapter 19.

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2-466 CERTIFICATION PROCESS DIFFERENCES FOR BASIC PART 135 OPERATORS. This paragraph describes deletions, modifications, and additions to the certification process described in Volume 2, Chapter 4, Sections 1 through 5.

A. Preapplication Phase. The differences are as follows:

1) The applicant must attach to the PASI a brief statement identifying the regulations from which they are requesting a deviation. The statement will present justifications for the proposed deviations and include descriptions of the size and scope of the proposed operation.

2) During the preapplication meeting, the CPM will ensure that the applicant's representatives thoroughly understand that the requested deviations will not be allowed unless the justifications presented with the application merit granting the request. The operator should consider developing alternative plans for certification if any request for deviation is denied.

B. Formal Application Phase. The differences are as follows:

1) If a basic part 135 operator is requesting any deviations, those deviations must be identified in a letter and attached to the application. This letter must identify each regulation for each deviation the applicant is requesting. The letter must also identify all documents the applicant is submitting in support of the request for deviation.

2) When a formal application is accepted from a basic part 135 operator, which requires approval of a deviation by the CHDO, a copy of the application (and the pertinent attachments) shall be forwarded to the regional Flight Standards division (RFSD). The copy shall be accompanied by the recommendations of the CPM along with the approval/denial by the district office manager and any background information that supports the decision.

3) If permission to deviate is denied, the CPM shall notify the applicant. It may be necessary to reject the entire formal application. However, if the applicant has previously prepared an acceptable, alternative plan to proceed with certification (even though the request for deviation may be denied), and this plan was made part of the original formal application, denial of a request for deviation may not require rejection of the whole formal application.

4) When a formal application submitted by a basic part 135 operator includes a request for deviation from the training requirements of § 135.341(a) involving a third party (e.g., a training organization or another part 135 operator), a copy of the application and pertinent attachments shall be forwarded to the RFSD within 5 working days. The copy will be accompanied by recommendations from the CPM and district office manager concerning the request for deviation. The RFSD manager shall review and, after coordination with the regional or district office responsible for the training organization or other part 135 operator, determine what action will be taken on the request. When a training organization is involved (other than a part 135 operator), the RFSD shall obtain concurrence from AFS-200 before authorizing the deviation. The RFSD shall notify the CPM and district office manager of the acceptability of the request for deviation.

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5) Until the applicant has satisfactorily completed the certification process, any grant of deviation must be temporary. The deviations will be made effective as of the date the certificate is issued.

6) Each deviation must include a provision for automatic invalidation of the deviation when the operator no longer meets the criteria for classification as a basic part 135 operator.

C. DA Phase. There are no differences.

D. PA Phase. There are no differences.

E. Administrative Function Phase. There is one difference in the certification phase. Each basic part 135 operator shall be issued an appropriate standard OpSpec paragraph authorizing limited deviation from §§ 119.69(a), 135.21(a), and 135.341(a).

NOTE: Inspectors should utilize Figure 2-12, Part 135 Certification Job Aid and Schedule of Events for Single-Pilot, Single PIC, and Basic Applicants, to complete the single-pilot, single PIC, and basic part 135 operator certification process.

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Figure 2-12. Part 135 Certification Job Aid and Schedule of Events for Single-Pilot, Single PIC, and Basic Applicants

PTRS Code/ Input	I. PREAPPLICATION PHASE	Date(s) Received	Date(s) Returned for Changes	Date Accepted	Insp. Initials
	A. REVIEW PREAPPLICATION STATEMENT OF INTENT (PASI) B. TITLE 14 OF THE CODE OF FEDERAL REGULATIONS (14 CFR) PART 119 RÉSUMÉS C. SCHEDULE OF EVENTS (SOE)				
	II. FORMAL APPLICATION PHASE				
	NOTE: Enter information provided by the applicant and update prepopulated fields as appropriate within the Certificate Holder Operating Profile (CHOP).				
	A. REVIEW APPLICANT'S SUBMISSIONS 1. FORMAL APPLICATION LETTER				
	a. Full and Official Name (Legal)				
	b. Mailing Address				
	c. Primary Operating Location (Principal Operations Base)				
	d. Name and Address of Applicant's Agent for Service				
	e. Key Management Personnel Names				
	2. FORMAL APPLICATION ATTACHMENTS				
	a. SOE				
	b. Initial Compliance Statement				
	c. Proposed Operations Specifications (OpSpecs)				
	d. Company General Manuals (Operations and Maintenance)				

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Figure 2-12. Part 135 Certification Job Aid and Schedule of Events for Single-Pilot, Single PIC, and Basic Applicants (Continued)

	e. New-Hire Training Curricula, to include: • Basic Indoctrination • Crewmember Emergency Training • Pilot—Ground & Flight Training to Include: Initial, Upgrade, Transition, Differences & Recurrent, as applicable • Flight Attendant (F/A) Ground Training to Include: Initial, Transition & Recurrent, as applicable* • Hazardous Materials (Hazmat) Training • Initial/Transition Check Airmen Training • Initial/Transition Flight Instructor Training • Security Training				
	f. Management Qualification Résumés				
	g. Documents of Purchase/Contract/Lease/Letters of Intent (LOI)				
	h. Applicant completed Element Performance Data Collection Tools (ED DCT)				
	B. EVALUATE FEDERAL AVIATION ADMINISTRATION (FAA) RESOURCE CAPABILITY BASED ON SOE				
REMARKS:					

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Figure 2-12. Part 135 Certification Job Aid and Schedule of Events for Single-Pilot, Single PIC, and Basic Applicants (Continued)

	C. FORMAL APPLICATION MEETING 1. SCHEDULE MEETING Date: Time: 2. DISCUSS EACH SUBMISSION 3. RESOLVE DISCREPANCIES/OPEN ITEMS 4. REVIEW CERTIFICATION PROCESS 5. REVIEW IMPACT IF SOE NOT MET				
	D. ISSUE LETTER ACCEPTING/REJECTING APPLICATION				
REMARKS:					
	III. DESIGN ASSESSMENT (DA) PHASE				
	A. EVALUATE APPLICABLE TRAINING PROGRAMS 1. TRAINING CURRICULA				
	a. Basic Indoctrination				
	b. Crewmember Emergency Training				
	c. Pilot Initial Ground & Flight Training				
	d. Pilot Recurrent Training				
	e. Pilot Transition/Upgrade/Differences Training				
	f. F/A Initial Ground Training (as applicable)*				
	g. F/A Transition/Recurrent Training (as applicable)*				
	h. Security Training				
	i. Hazmat				
	j. Check Airman/Flight Instructor				

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Figure 2-12. Part 135 Certification Job Aid and Schedule of Events for Single-Pilot, Single PIC, and Basic Applicants (Continued)

	k. Maintenance Personnel				
	B. EVALUATE MANAGEMENT QUALIFICATIONS				
	1. DIRECTOR OF OPERATIONS (DO) (Principal Owner/Principal Ops Official*)				
	2. CHIEF PILOT*				
	3. DIRECTOR OF MAINTENANCE (DOM)*				
	4. REQUEST FOR DEVIATION LETTER(S) (part 119, § 119.71(f))				
	C. EVALUATE APPLICABLE MANUALS NOTE: See 14 CFR part 135, § 135.23 for a detailed list of requirements.				
	1. GENERAL OPERATIONS MANUAL (GOM)				
	a. Management Persons Required Under § 119.69(a)				
	b. Applicable OpSpec Sections				
	c. Emergency Plan/Accident Notification				
	d. Pilot in Command (PIC) Knowledge of: Required Airworthiness Inspections, Reporting and Recording of Mechanical Irregularities, Minimum Equipment List (MEL)/Logbook Knowledge and Out Station Maintenance/Servicing				
	e. Procedures for the Release for, or Continuation of, Flight with Inoperable or Unserviceable Equipment				
	2. GENERAL MAINTENANCE MANUAL (GMM)				
	3. FAA-APPROVED AIRPLANE FLIGHT MANUAL (AFM)				

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Figure 2-12. Part 135 Certification Job Aid and Schedule of Events for Single-Pilot, Single PIC, and Basic Applicants (Continued)

	4. AIRCRAFT CHECKLISTS				
	a. Normal				
	b. Abnormal				
	c. Emergency				
	5. F/A MANUAL (AS APPLICABLE)				
	6. DESTINATION AIRPORT ANALYSIS (AS APPLICABLE)*				
	7. MEL				
	8. CONFIGURATION DEVIATION LIST (CDL) (AS APPLICABLE)				
	9. MAINTENANCE TECHNICAL MANUALS (AS APPLICABLE):				
	a. Airframe/Powerplant				
	b. Structural Repair				
	c. Parts Catalogue				
	d. Inspection Procedures				
	e. Manufacturer’s or Vendor’s Manual				
	f. Wiring Manual				
	g. Overhaul Manual				
	10. FUELING/REFUELING PROCEDURES				
	11. FLIGHT LOCATING (AS APPLICABLE)				
	12. WEIGHT AND BALANCE (W&B) LIMITATIONS				
	13. HAZMAT RECOGNITION AND/OR ACCEPTANCE				
	14. SECURITY PROGRAM				
	15. CONTINUOUS AIRWORTHINESS MAINTENANCE PROGRAM (CAMP) (IF APPLICABLE)				
REMARKS:					

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Figure 2-12. Part 135 Certification Job Aid and Schedule of Events for Single-Pilot, Single PIC, and Basic Applicants (Continued)

	D. OTHER EVALUATIONS (AS APPLICABLE)*				
	1. AIRCRAFT LEASE				
	2. MAINTENANCE CONTRACTS/AGREEMENTS				
	3. SERVICING CONTRACTS/AGREEMENTS				
	4. EXEMPTION/DEVIATION REQUESTS/JUSTIFICATION				
	5. AIRCRAFT PROVING OR VALIDATION TEST PLAN (IF APPLICABLE)				
	6. ENVIRONMENTAL ASSESSMENT				
	7. FINAL COMPLIANCE STATEMENT				
	8. INITIATE OPSPECS PREPARATION DATA SHEET				
	9. TRAINING CONTRACTS				
	10. DEICING/ANTI-ICING				
	11. EXIT ROW SEATING (20-30 SEAT ON-DEMAND OR COMMUTER 10 OR MORE SEATS)*				
	12. ANTIDRUG AND ALCOHOL MISUSE PREVENTION PROGRAM				
	13. COMPLETE ASSIGNED ED DCT				
REMARKS:					

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Figure 2-12. Part 135 Certification Job Aid and Schedule of Events for Single-Pilot, Single PIC, and Basic Applicants (Continued)

	IV. PERFORMANCE ASSESSMENT (PA) PHASE				
	A. EVALUATE APPLICANT CONDUCTING TRAINING				
	1. TRAINING FACILITIES				
	2. TRAINING SCHEDULES				
	3. FLIGHTCREW MEMBER TRAINING*				
	a. Basic Indoctrination				
	b. Emergency Training				
	c. Ground Training				
	d. Flight Training				
	4. CHECK AIRMAN/FLIGHT INSTRUCTOR				
	5. F/A TRAINING*				
	a. Basic Indoctrination				
	b. Emergency Training				
	c. Ground Training				
	6. HAZMAT				
	7. SECURITY TRAINING				
	8. MAINTENANCE TRAINING				
	a. Mechanics/Repairmen				
	b. Inspection Personnel				
	c. Ground Handling/Servicing				
	d. Station Personnel				
REMARKS:					

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Figure 2-12. Part 135 Certification Job Aid and Schedule of Events for Single-Pilot, Single PIC, and Basic Applicants (Continued)

	B. CREWMEMBER TESTING AND/OR CERTIFICATION				
	1. PILOTS				
	2. F/As*				
REMARKS:					
	C. AIRCRAFT CONFORMITY INSPECTION				
	D. MAIN OPERATIONS BASE				
	E. MAIN MAINTENANCE BASE				
	F. RECORDKEEPING:				
	1. CREWMEMBER:				
	a. Training				
	b. Flight & Rest Times				
	c. Qualifications				
	G. MAINTENANCE:				
	1. AIRCRAFT RECORDS				
	2. PERSONNEL TRAINING				
	3. PERSONNEL DUTY TIME LIMITATIONS				
	H. FLIGHT/TRIP RECORDS				
	I. EMERGENCY AND EMERGENCY EVACUATION DUTIES AND PROCEDURES				
	J. AIRCRAFT PROVING TEST(S) (AS APPLICABLE)				
	K. VALIDATION TEST(S) (AS APPLICABLE)				
	L. PROOF OF DEPARTMENT OF TRANSPORTATION (DOT) ECONOMIC AUTHORITY (AIR CARRIERS ONLY)				
REMARKS:					

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Figure 2-12. Part 135 Certification Job Aid and Schedule of Events for Single-Pilot, Single PIC, and Basic Applicants (Continued)

	V. ADMINISTRATIVE FUNCTION PHASE				
	A. APPROVE OPSPECS				
	B. PRESENT CERTIFICATE & OPSPECS TO CERTIFICATE HOLDER				
REMARKS:					
	C. PREPARE CERTIFICATION REPORT				
	1. ASSEMBLE REPORT				
	a. PASI				
	b. Certification Job Aid				
	c. Formal Application Letter				
	d. SOE				
	e. Final Compliance Statement				
	f. Proving/Validation Test Evaluation Report				
	g. Copy of OpSpecs				
	h. Copy of Certificate				
	i. Summary of Difficulties				
	j. Suggestions to Improve Certification Process				
	2. DISTRIBUTE REPORT				
REMARKS:					

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Figure 2-12. Part 135 Certification Job Aid and Schedule of Events for Single-Pilot, Single PIC, and Basic Applicants (Continued)

	D. DEVELOP POSTCERTIFICATION SURVEILLANCE PROGRAM 1. WITHIN GEOGRAPHICAL AREA				
	2. OUTSIDE GEOGRAPHICAL AREA				
REMARKS:					
*—Denotes processes/steps that may not be required of single-pilot, single PIC, or basic part 135 operators					

RESERVED. Paragraphs 2-467 through 2-480.

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VOLUME 2 AIR OPERATOR AND AIR AGENCY CERTIFICATION AND APPLICATION PROCESS

CHAPTER 4 THE CERTIFICATION PROCESS—14 CFR PART 135

Section 8 Safety Assurance System: Evaluate a Part 135 (Nine or Less) Operator's/Applicant's Maintenance Requirements

2-506 REPORTING SYSTEM(S). Use Safety Assurance System (SAS) automation to record part 135 maintenance oversight. This section is related to SAS elements in System 4, Aircraft Technical Operations.

2-507 OBJECTIVE. This section provides information, policy, and guidance on aircraft maintenance requirements a person must meet to operate under Title 14 of the Code of Federal Regulations (14 CFR) part 135 with aircraft type certificated (TC'd) for a passenger seating configuration, excluding any pilot seat, of nine seats or less. Inspectors should use this section with other applicable sections in Volume 2, Chapter 4.

2-508 BACKGROUND.

A. Part 135 Maintenance Requirements. The primary factor in determining the applicable maintenance, preventive maintenance, and alterations requirements for aircraft operated under part 135 is the number of TC'd passenger seats configured for the aircraft. Part 135, § 135.411(a)(1) contains the requirements for aircraft TC'd for a passenger seating configuration, excluding any pilot seat, of nine seats or less. Section 135.411(a)(2) contains the requirements for aircraft TC'd for a passenger seating configuration, excluding any pilot seat, of 10 seats or more. In practice, the number of seats installed in an aircraft as manufactured will differ from the maximum capacity approved as part of the aircraft's type design. Some manufacturers may approve passenger seating "configurations" as part of the type design with fewer number of passenger seats specified than the maximum "capacity" allowed by that type design. To determine which maintenance program under § 135.411(a) applies to a particular aircraft, one would compare the number of seats and as configured interior to those listed, or referenced, on either the TCDS or the type certificate (TC) (see 14 CFR part 21, § 21.41, for the definition of TC). For the purpose of this section, operators may elect to configure their aircraft in accordance with any of those TC'd passenger seating configurations.

B. Distinction Between Nine or Less and 10 or More. The Federal Aviation Administration (FAA) made the 9 or less, 10 or more distinction in 1978 when amending part 135. The preambles to both the Notice of Proposed Rulemaking (NPRM) and the Final Rule make clear that it is the TC'd passenger seating configuration (meaning the actual numbers of seats listed in the TC or Supplemental Type Certificate (STC) as an approved configuration) of an aircraft, not its size or complexity, that determines which of the above two alternative maintenance programs applies to a particular aircraft (42 FR 43536, August 29, 1977, and 43 FR 46779, October 10, 1978). As further discussed below, this means that the passenger seating configuration and the actual numbers of seats of the particular aircraft at issue must be included in the TC (which may be referenced on the Type Certificate Data Sheet (TCDS) or approved through an STC.

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C. Part 135 Maintenance Provisions. For the purposes of § 135.411(a), an aircraft's maximum seating capacity does not necessarily determine the applicable maintenance provisions of this section. Some design approval holders (DAH) may obtain an FAA-issued TC for an aircraft, without providing or referencing an interior seating configuration on the TCDS. Based on an engineering analysis and proof of regulatory compliance, they will often place an "up to" or "maximum passenger capacity" limitation on the TCDS for that aircraft. This TCDS number is relevant because the DAH will generally demonstrate compliance to the applicable certification standards by specifying the maximum number of passenger seats allowed, giving consideration to such things such as weight, balance, floor loading, and passenger egress, for example. However, this figure does not generally represent the TC'd seating configuration and actual number of seats approved (TC'd) for a particular aircraft. Instead, it generally represents the maximum passenger capacity allowed for that particular type design.

D. Removal of Passenger Seats. The FAA considered that some air carriers could remove one or two seats from the aircraft that carried slightly more than 10 passengers to avoid the otherwise applicable regulation. However, the FAA believed this was unlikely to prevent a problem because seat removal precluded the realization of the aircraft's full productivity potential and resulted in a significant economic penalty to the air carrier. The FAA noted that the trend at the time was to operate aircraft with more seats, not less.

NOTE: For aircraft conducting operations under the provisions of part 135, (with nine or less passenger seats) the pilot of that certificate holder may perform the removal and reinstallation of approved aircraft cabin seats, provided that pilot has satisfactorily completed an approved training program and is authorized in writing by the certificate holder to perform that task. The air carrier must have written procedures available for the pilot to evaluate the accomplishment of the task.

E. Type Certificated Passenger Seating Configuration. To determine which maintenance program under § 135.411(a) applies to a particular aircraft, one would compare the number of seats and as configured interior to those listed, or referenced, on the TCDS. Different configurations may also have been approved during the type certification process, but are not always provided to the owner/operator through TCDS; these configurations may reside only in the DAH's drawings. Accordingly, if an aircraft is being operated under part 135, and is configured with any one of a number of passenger seating configurations that are included in the TC (e.g., drawings that are approved as part of the type design), the passenger seating configuration and number of seats installed on that particular aircraft determines whether § 135.411(a)(1) or § 135.411(a)(2) applies for purposes of determining the aircraft's maintenance program. A DAH may also provide the FAA with one or more seating configuration(s) and seat numbers, at the time of certification, that are within the maximum capacity limitation. Generally, these configurations are referenced on the TCDS, and provide the various configurations through either the Aircraft Flight Manual (AFM) or Pilot Operating Handbook (POH).

F. Maintenance Programs for Custom Type Designs. Occasionally, owners/operators elect to customize the interior configurations of their aircraft, with configurations that are not included in the approved type design, to meet their needs. In order to use these seating configurations when determining which maintenance program should be used, (i.e., whether § 135.411(a)(1) or § 135.411(a)(2) applies), either the DAH would have to amend the type

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design, to include the owner/operator's configuration, or the configuration would require approval through the STC process.

G. Operation Versus Maintenance. Whereas the removal of passenger seats without an STC or TC amendment, blocking of passenger seats, and the use of place cards restricting the use of passenger seats may be acceptable for aircraft operations, it does not constitute an acceptable means of qualifying the aircraft for maintenance requirements under § 135.411(a)(1). These methods do not change the TC'd passenger seating configuration.

2-509 OPERATIONS SPECIFICATIONS (OPSPECS).

A. Commuter Operations. The air carrier that conducts commuter operations under part 135 must obtain the OpSpecs listed in 14 CFR part 119, § 119.49.

B. On-Demand Operations. The air carrier that conducts on-demand operations under part 135 must obtain the OpSpecs listed in § 119.49(c).

C. Additional Maintenance Requirements. Section 119.49(c)(9) requires the air carrier conducting on-demand operations to obtain the following OpSpecs for additional maintenance requirements under § 135.421, as applicable. The following OpSpecs may not require the listing of every item on the aircraft with a time limit as OpSpec D088, Maintenance Time Limitations Authorization, or OpSpec D089, Maintenance Time Limitations Section, do. However, this does not relieve the air carrier from tracking and complying with time limit-related regulations such as 14 CFR part 91, §§ 91.403(c) and 91.409(e).

- OpSpec D101, Additional Maintenance Requirements—Aircraft Engine, Propeller, and Propeller Control (Governor);
- OpSpec D102, Additional Maintenance Requirements—Rotorcraft;
- OpSpec D103, Additional Maintenance Requirements—Single Engine IFR; and
- OpSpec D104, Additional Maintenance Requirements—Emergency Equipment.

2-510 MAINTENANCE AND INSPECTION REQUIREMENTS–§ 135.411(a)(1).

A. Maintenance and Inspection. Section 135.411(a)(1) requires air carriers utilizing aircraft that are TC'd for a passenger seating configuration, excluding any pilot seat, of nine seats or less to maintain the aircraft under 14 CFR parts 43 and 91, including §§ 135.415, 135.417, 135.421, and 135.422. Section 135.411(a)(1) also provides the air carrier the option of using the Approved Aircraft Inspection Program (AAIP) under § 135.419 to inspect its aircraft in lieu of using an inspection listed under § 91.409. Additionally, § 135.411(b) provides a third option to the air carrier, which is to maintain its aircraft under a Continuous Airworthiness Maintenance Program (CAMP) under § 135.411(a)(2). The FAA evaluates and authorizes a CAMP in accordance with the guidance in Volume 3, Chapter 43, Section 1, Evaluating a Part 121 and Part 135 Continuous Airworthiness Maintenance Program. Because of these variables/options for maintaining aircraft with nine or fewer seats, the air carrier and inspector must read, understand, and follow the applicable regulations for maintaining the aircraft.

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B. Authority to Perform and Approve Maintenance. The air carrier that maintains its aircraft under § 135.411(a)(1) is not a maintenance entity and is not authorized under part 135 to perform and approve maintenance on its aircraft under its certificate.

NOTE: The authority to perform and approve maintenance as provided in § 135.427 only applies to the air carrier that maintains its aircraft under § 135.411(a)(2). Therefore, the air carrier maintaining its aircraft under § 135.411(a)(1) must use persons listed in part 43, §§ 43.3 and 43.7 authorized to perform maintenance and approve the aircraft for return to service.

C. Manual Requirements. The air carrier that maintains its aircraft under § 135.411(a)(1) is not required to comply with the manual requirements specified in § 135.427. However, this does not relieve the air carrier from having the programs, instructions, and manuals required elsewhere in the regulations, such as in § 91.409(d). Except for single-pilot and single pilot-in-command (PIC) operations, all air carriers, regardless of how they maintain their aircraft, are required to have the manual specified in § 135.21. Although this manual is commonly referred to as the operations manual, it contains some maintenance-related items, such as the AAIP, when applicable.

D. Part 135 Included. Under § 135.411(a)(1), the air carrier is required to comply with the following maintenance related sections of part 135, which are discussed later in this section:

- Section 135.413;
- Section 135.415;
- Section 135.417;
- Section 135.419 (only required for AAIP);
- Section 135.421; and
- Section 135.422.

2-511 MAINTAINING AIRCRAFT UNDER PART 91.

A. Part 91. Unless stated otherwise in the regulation, the part 91 maintenance regulations referenced in § 135.411(a)(1) are those listed in part 91 subpart E, Maintenance, Preventive Maintenance, and Alterations, and § 91.207. Instead of restating each part 91 subpart E regulation, this section will address those regulations that have caused the most confusion.

B. Responsibility. Section 135.413(a) makes the air carrier that maintains its aircraft under § 135.411(a)(1) primarily responsible for the airworthiness of its aircraft. However, responsibility for the performance of maintenance is shared between the air carrier and the mechanic performing the maintenance. This is consistent with the part 91 and part 43 regulation under which the aircraft is maintained, such as §§ 91.403, 91.405, 43.13, and 43.15.

C. Part 91 Inspections. If the air carrier does not choose the AAIP or CAMP options under § 135.411 for its nine or less aircraft, it must inspect its aircraft in accordance with § 91.409. The inspector should advise the air carrier to read § 91.409 carefully, starting at the beginning to determine which inspection is appropriate for their type of operation. Some types of

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inspections listed under § 91.409 are optional and some are required. If requested, the inspector may provide assistance to the air carrier by explaining the inspections listed in § 91.409 applicable to the air carrier.

D. Annual. Section 91.409(a) states that, except as provided in § 91.409(c), no person may operate an aircraft unless, within the preceding 12 calendar-months, it has had an annual inspection in accordance with part 43 and has been approved for return to service by a person authorized by § 43.7. The air carrier that inspects its aircraft under the annual inspection must include all of the items listed in part 43 appendix D, Scope and Detail of Items (As Applicable to the Particular Aircraft) to Be Included in Annual and 100-Hour Inspections that apply to the air carrier's particular aircraft. The air carrier may include more items in its inspections than those listed in part 43 appendix D.

E. 100-Hour. Section 91.409(b) states that, except as provided in § 91.409(c), no person may operate an aircraft carrying any person (other than a crewmember) for hire unless within the preceding 100 hours of time in service the aircraft has received an annual or 100-hour inspection and has been approved for return to service in accordance with part 43 of this chapter or has received an inspection for the issuance of an airworthiness certificate in accordance with part 21 of this chapter. Part 43 appendix D lists the scope and detail of the 100-hour inspection. The air carrier that inspects its aircraft under the 100-hour inspection must include all of the items listed in part 43 appendix D that apply to the air carrier's particular aircraft. The air carrier may include more items in its inspections than those listed in part 43 appendix D. The air carrier may exceed the 100-hour limitation by no more than 10 hours while en route to reach a place where the inspection can be done. However, this provision does not apply to Airworthiness Directives (AD) or airworthiness limitations (AL) in the manufacturer's maintenance manual or instructions for continued airworthiness (ICA). In computing the next 100 hours of time in service, the air carrier must include the excess time it used to reach the place where the inspection took place.

F. Annual/100-Hour Applicability. Section 91.409(c) states that § 91.409(a) and (b) do not apply to the following:

- An aircraft that carries a special flight permit, a current experimental certificate or a light-sport or provisional airworthiness certificate;
- An aircraft inspected in accordance with an AAIP under part 135 and so identified by the registration number in the OpSpecs of the certificate holder having the approved inspection program;
- An aircraft subject to the requirements of § 91.409(d) or (e); or
- Turbine-powered rotorcraft when the operator elects to inspect that rotorcraft in accordance with § 91.409(e).

G. Progressive Inspection. Section 91.409(d) provides that each registered owner or operator of an aircraft desiring to use a progressive inspection program must submit a written request to the Flight Standards District Office (FSDO) that has jurisdiction over the area in which the applicant is located, and shall provide the following:

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1) A certificated mechanic holding an IA, a certificated airframe repair station, or the manufacturer of the aircraft to supervise or conduct the progressive inspection;

2) A current inspection procedures manual available and readily understandable to pilot and maintenance personnel containing, in detail:

- An explanation of the progressive inspection, including the continuity of inspection responsibility, the making of reports, and the keeping of records and technical reference material;
- An inspection schedule specifying the intervals in hours or days for routine and detailed inspections that includes instructions for exceeding an inspection interval by not more than 10 hours while en route and for changing an inspection interval because of service experience;
- Sample routine and detailed inspection forms and instructions for their use;
- Sample reports, records and instructions for their use;
- Enough housing and equipment for necessary disassembly and proper inspection of the aircraft; and
- Appropriate current technical information for the aircraft.

H. Progressive Inspection Advantages. A progressive inspection allows the air carrier to inspect the aircraft progressively. It breaks down the large task of conducting a major inspection, such as an annual inspection, into smaller tasks that an air carrier can accomplish periodically without taking the aircraft out of service for an extended period of time. The air carrier normally gains the advantage of the progressive inspection when the aircraft operates beyond a minimum number of hours per year, usually established by the manufacturer.

I. Progressive Inspection Review. The Airworthiness inspector will verify:

- The air carrier has submitted their written request to use the progressive inspection.
- The air carrier is located within the jurisdiction of the FSDO.
- The air carrier's request contains the name of one of the persons listed under § 91.409(d)(1). If the air carrier provides the name of a mechanic, the inspector will verify the mechanic's certificate and IA. If the air carrier provides the name of a repair station, the inspector will verify the repair station is rated to conduct the inspection.
- The air carrier provides a current inspection procedures manual that contains in detail all the requirements listed under § 91.409(d)(2) and the last paragraph under § 91.409(d).
- The inspection procedures manual is available and readily understandable to the pilot and maintenance personnel.
- The air carrier provides enough housing and equipment for necessary disassembly and proper inspection of the aircraft.
- The air carrier provides appropriate current technical information for the aircraft.
- The air carrier is aware of the regulatory requirements for discontinued use of the progressive inspection.

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J. Large Airplanes, Turbojet Multiengine Airplanes, Turbopropeller-Powered Multiengine Airplanes, and Turbine-Powered Rotorcraft. Section 91.409(e) pertains to large airplanes (more than 12,500 pounds maximum takeoff weight (MTOW); see Volume 2, Chapter 2, Section 2, paragraph 2-129C for modified aircraft), turbojet multiengine airplanes, turbopropeller-powered multiengine airplanes, and turbine-powered rotorcraft. The inspector will verify the following:

- The air carrier's aircraft conforms to the requirement for replacement of life-limited parts specified in the aircraft specifications, TCDS, or other documents approved by the Administrator.
- The air carrier has a method, means and controls for tracking life-limited parts and ensuring their replacement.
- The air carrier selects an inspection program under § 91.409(f) and inspects the aircraft including the airframe, engines, propellers, rotors, appliances, survival equipment, and emergency equipment in accordance with the program.

NOTE: The air carrier operating a turbine-powered rotorcraft may elect to use the inspection provisions of § 91.409(a), (b), (c), or (d) in lieu of an inspection option of § 91.409(f).

K. Identify Inspection Program. The inspector will verify the air carrier identifies the inspection program it selected under § 91.409(f) in the aircraft maintenance records. The inspector will also verify the air carrier includes in its program the name and address of the person responsible for scheduling the inspections required by the program. The inspector will verify that the air carrier makes a copy of that program available to the person performing inspections on the aircraft and, upon request, to the Administrator. The following is a list of programs under § 91.409(f) that the air carrier may select from:

NOTE: The inspection listed in § 91.409(f)(4) is the only inspection listed under § 91.409(f) that requires FAA approval.

1) If the air carrier selects a continuous airworthiness inspection program, it must show that it is part of a CAMP currently in use by a person holding an air carrier operating certificate or an operating certificate issued under part 121 or 135 and operating that make and model aircraft under part 121, or operating that make and model under part 135 and maintaining it under § 135.411(a)(2).

NOTE: A continuous airworthiness inspection program is not the same thing as a CAMP. The inspection program is only one element of the maintenance program. The inspector will verify what the air carrier has submitted is correct.

2) If the air carrier chooses the AAIP program, it must show that it is approved under § 135.419 and currently in use by a person holding an operating certificate issued under part 135. The inspector will verify what the air carrier has submitted is correct. The inspector does not approve the AAIP again. However, once authorized, any changes must be FAA-approved.

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3) If the air carrier selects a current inspection program recommended by the manufacturer, it must provide the manufacturer's document that shows and describes the program. The inspector will verify that the program submitted is current, applicable, and complete.

NOTE: Normally, the manufacturer's inspection program applies to the aircraft as it was configured when it left the factory. If the aircraft was altered after it left the factory, the air carrier must account for the manufacturer's inspection requirements for the alteration.

4) Any other inspection program established by the registered owner or operator of that airplane or turbine-powered rotorcraft and approved by the Administrator under § 91.409(g). However, the Administrator may require revision of this inspection program in accordance with the provisions of § 91.415. The inspector will use the manufacturer's recommended inspection program as the basis for approving this program. The inspector should be aware that the manufacturer's inspection program might not cover all the equipment installed on the aircraft after it was manufactured.

L. Changes to Inspection Program. Section 91.409(h) requires that, when the air carrier changes from one inspection program under § 91.409(f) to another, the time in service, calendar times, or cycles of operation accumulated under the previous program must be applied in determining inspection due times under the new program.

M. FAA Changes to Aircraft Inspection Programs. Section 91.415 provides the authority to the FAA to make changes to the air carrier's FAA-approved inspection program under § 91.409(f)(4). The FAA must find that the revisions are necessary for the continued adequacy of the program.

N. Maintenance Records. Section 91.417 contains the maintenance records requirements for the air carrier maintaining its aircraft under § 135.411(a)(1). For additional information on maintenance records, see Volume 6, Chapter 1, Section 3.

2-512 MAINTAINING AIRCRAFT UNDER PART 43.

A. Part 43. The part 43 regulations referenced in § 135.411(a)(1) are all those listed in part 43, unless stated otherwise in each section of part 43. Instead of restating each part 43 regulation, this section will address those regulations that have caused the most confusion.

B. Authority to Perform Maintenance. An air carrier that is subject to § 135.411(a)(1) is not authorized to perform maintenance and must use persons authorized, as specified in §§ 43.3 and 43.7. Sections 43.3 and 43.7 list persons authorized to perform and approve maintenance on the air carrier aircraft maintained under § 135.411(a)(1). The inspector should note that the reference to the air carrier in § 43.3(f) and § 43.7(e), respectively, doesn't apply because the provision in § 135.437 to perform and approve maintenance only applies to the air carrier that maintains its aircraft under § 135.411(a)(2).

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C. Approval for Return to Service. Sections 43.5 and 91.407 govern approval for return to service following the performance of maintenance on aircraft maintained under § 135.411(a)(1).

D. Content Form and Disposition of Records.

1) Except Inspections. Section 43.9 contains the requirements for recording maintenance, preventive maintenance, rebuilding, and alterations for aircraft maintained under § 135.411(a)(1).

2) For Inspections. Section 43.11 contains the requirements for recording inspections performed under part 91 and §§ 135.411(a)(1) and 135.419.

E. Maintenance, Preventive Maintenance, and Alteration Performance Rules. Section 43.13 contains the performance rule for maintenance, preventive maintenance, and alterations for aircraft maintained under § 135.411(a)(1). The provision under § 43.13(c) for using the air carrier's manual does not apply to aircraft maintained under § 135.411(a)(1).

F. Additional Performance Rules for Inspections. Section 43.15 contains additional performance rules for inspections performed under parts 91 and 135 that are applicable to aircraft maintained under § 135.411(a)(1).

G. Airworthiness Limitations. Section 43.16, which is applicable to the air carrier that maintains its aircraft under § 135.411(a)(1), requires each person performing an inspection or other maintenance specified in an ALs section of a manufacturer's maintenance manual or ICA shall perform the inspection or other maintenance in accordance with that section, or in accordance with the OpSpecs approved by the Administrator under part 135, or an inspection program approved under § 91.409(e). Additional information on ICAs is available in the current edition of Advisory Circular (AC) 33.4-1, Instructions for Continued Airworthiness.

2-513 ADDITIONAL MAINTENANCE REQUIREMENTS.

A. Additional Requirements. Each air carrier maintaining its aircraft under § 135.411(a)(1) must also comply with the additional maintenance requirements of § 135.421. Section 135.421 states that each certificate holder who operates an aircraft TC'd for a passenger seating configuration (excluding any pilot seat) of nine seats or less, must comply with the manufacturer's recommended maintenance programs or a program approved by the Administrator for each aircraft engine, propeller, rotor, and each item of emergency equipment required by the regulations. It is important to note that the requirements are not just limited to inspections; they must include all requirements, such as cleaning, inspecting, adjusting, testing, and lubricating.

B. Manufacturer's Maintenance Program. Section 135.421 specifies that a manufacturer's maintenance program is one that is contained in the maintenance manual or maintenance instructions set forth by the manufacturer as required by the applicable regulations for the aircraft, aircraft engine, propeller, rotor, or item of emergency equipment. These added requirements are intended to ensure the performance of the manufacturer's recommended

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maintenance programs on engines, propellers, rotors, and each item of required emergency equipment. These requirements do not apply to the airframe.

C. Engines and Propellers. Engine requirements apply to the engine itself, including turbosuperchargers and accessories necessary to its function. They do not include aircraft provisions such as mounts or cowling, or accessories such as generators or starters. A propeller is defined in 14 CFR part 1 as including controls normally supplied by the manufacturer. Most propeller TCDSs specify the applicable control unit, which a person should consider part of the propeller.

D. Program Approved by Administrator. Section 135.421 provides the applicant the option to use an FAA-approved maintenance program in lieu of the manufacturer's recommended maintenance program for each aircraft engine, propeller, or rotor it intends to operate and each item of emergency equipment required by regulation. If the applicant chooses this option and submits a program for approval, the inspector will use the manufacturer's recommended maintenance program as the basis for the review. The inspector must inform the applicant prior to the review that he or she will only consider any deviation from the manufacturer's program on the basis of the applicant submitting acceptable justification for the deviation. Additionally, the inspector may consider for approval a program submitted by the applicant that is based on a current approved program for another air carrier for a similar make and model aircraft. However, the inspector must take into account such things as the applicant's experience, operating environment, and maintenance support before approving the program. Once approved, any changes made to the program must also receive FAA approval. Changes submitted by the air carrier that are based on changes to the manufacturer's program will not receive automatic approval. Again, the inspector will consider such things as the air carrier's experience, operating environment, and maintenance support prior to approving the changes.

E. Single-Engine Aircraft Used in Passenger-Carrying Instrument Flight Rules (IFR) Operations. Section 135.411(c) requires the air carrier that uses a single-engine aircraft in passenger-carrying IFR operations to maintain the aircraft in accordance with § 135.421(c), (d), and (e).

1) Section 135.421(c) requires that, for each single-engine aircraft used in passenger-carrying IFR operations, the air carrier must incorporate into its maintenance program either:

- The manufacturer's recommended engine trend monitoring program (see subparagraph 2-514A), which includes an oil analysis, if appropriate; or
- An FAA-approved engine trend monitoring program that includes an oil analysis at each 100-hour interval or at the manufacturer's suggested interval, whichever is more frequent (see subparagraph 2-514B).

2) Section 135.421(d) requires that, for single-engine aircraft to be used in passenger-carrying IFR operations, written maintenance instructions containing the methods, techniques, and practices necessary to maintain the equipment specified in §§ 135.105 and 135.163(f) and (h) are required.

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3) Section 135.421(e) states that no air carrier may operate a single-engine aircraft under passenger-carrying IFR operations unless the air carrier records and maintains in the engine maintenance records the results of each test, observation, and inspection required by the applicable engine trend monitoring program specified in § 135.421(c)(1) and (2).

2-514 ENGINE TREND MONITORING.

A. Manufacturer. Some aircraft/engine manufacturers have developed engine trend monitoring programs for their products. Additionally, there are third-party service providers that will provide engine trend monitoring services to their customers. The inspector should review the engine trend monitor program to ensure that it is applicable to the air carrier's aircraft/operations and that the air carrier has the resources necessary to use the program (e.g., competent personnel, training, procedures, software (if applicable), equipment, and a recordkeeping system).

B. FAA-Approved. The current edition of AC 20-105, Reciprocating Engine Power-Loss Accident Prevention and Trend Monitoring, contains basic information on a trend monitoring program that the inspector should use to approve an engine trend monitoring program. Inspectors can seek assistance with approving the program from the applicable FAA Aircraft Evaluation Group (AEG).

2-515 AAIP. Section 135.411(a)(1) provides the air carrier the option of using the AAIP under § 135.419 for its TC'd nine or less passenger seat aircraft. Additionally, under § 135.419, the FAA may require the air carrier to use the AAIP for the reasons specified in the regulation. Regardless of the reason, the inspector will use Volume 3, Chapter 38, Section 1 to evaluate and approve the AAIP.

2-516 AGING AIRPLANE INSPECTIONS AND RECORDS REVIEWS FOR MULTIENGINE AIRPLANES CERTIFICATED WITH NINE OR FEWER PASSENGER SEATS.

A. Applicability. Section 135.422 applies to multiengine airplanes certificated with nine or fewer passenger seats, operated by the air carrier in a scheduled operation under part 135, except for those airplanes operated by the air carrier in a scheduled operation between any point within the State of Alaska and any other point within the State of Alaska.

B. Compliance Dates. After the dates specified in § 135.422, the air carrier may not operate a multiengine airplane in a scheduled operation under part 135 unless the Administrator has notified the air carrier that the Administrator has completed the aging airplane inspection and records review required by § 135.422. During the inspection and records review, the air carrier must demonstrate to the Administrator that the maintenance of age-sensitive parts and components of the airplane has been adequate and timely enough to ensure the highest degree of safety.

1) Airplanes exceeding 24 years in service on December 8, 2003; initial and repetitive inspections and records reviews. For an airplane that has exceeded 24 years in service on December 8, 2003, no later than December 5, 2007, and thereafter at intervals not to exceed seven years.

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2) Airplanes exceeding 14 years in service but not 24 years in service on December 8, 2003; initial and repetitive inspections and records reviews. For an airplane that has exceeded 14 years in service, but not 24 years in service, on December 8, 2003, no later than December 4, 2008, and thereafter at intervals not to exceed 7 years.

3) Airplanes not exceeding 14 years in service on December 8, 2003; initial and repetitive inspections and records reviews. For an airplane that has not exceeded 14 years in service on December 8, 2003, no later than five years after the start of the airplane's 15th year in service and thereafter at intervals not to exceed 7 years.

C. Scheduling Conflicts. In the event of an unforeseen scheduling conflict for a specific airplane, the Administrator may approve an extension of up to 90 days beyond an interval specified in § 135.422(b).

D. Must Make Available. The air carrier must make available to the Administrator each airplane for which an inspection and records review is required under § 135.422 in a condition for inspection specified by the Administrator, together with the records containing the following information:

- Total years in service of the airplane;
- Total time in service of the airframe;
- Date of the last inspection and records review required by this section;
- Current status of life-limited parts of the airframe;
- Time since the last overhaul of all structural components required to be overhauled on a specific time basis;
- Current inspection status of the airplane, including the time since the last inspection required by the inspection program under which the airplane is maintained;
- Current status of applicable AD, including the date and methods of compliance and, if the AD involves recurring action, the time and date when the next action is required;
- A list of major structural alterations; and
- A report of major structural repairs and the current inspection status for these repairs.

E. Notification to the FAA. Each air carrier must notify the Administrator at least 60 days before the date on which it will make the airplane and airplane records available for inspection and records review.

2-517 SERVICE DIFFICULTY REPORTS (SDR). Section 135.415 (which applies to all part 135 air carriers, operations, and aircraft) requires the air carrier to report the occurrence or detection of each failure, malfunction, or defect in an aircraft for the items listed under § 135.415. The inspector should use Volume 8, Chapter 5, Section 6 to evaluate the air carrier's compliance.

2-518 MECHANICAL INTERRUPTION SUMMARY REPORT (MISR). Section 135.417 (which applies to all part 135 air carriers, operations, and aircraft) requires the air carrier to mail

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or deliver, before the end of the 10th day of the following month, a summary report of the occurrences listed under § 135.417 in multiengine aircraft for the preceding month to the certificate-holding district office (CHDO). The inspector should use Volume 3, Chapter 32, Section 14 to evaluate the air carrier's compliance.

2-519 EXTENDED OPERATIONS (ETOPS). Section 135.411(d) requires an air carrier that elects to operate in accordance with § 135.364 to maintain its aircraft under § 135.411(a)(2) and the additional requirements of part 135 appendix G, Extended Operations (ETOPS). The inspector should use Volume 4, Chapter 6, Section 2 to evaluate the air carrier's compliance.

2-520 MANUFACTURER'S SERVICE PUBLICATIONS. Refer to the current edition of FAA Order 8620.2, Applicability and Enforcement of Manufacturer's Data.

RESERVED. Paragraphs 2-521 through 2-535.

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VOLUME 2 AIR OPERATOR AND AIR AGENCY CERTIFICATION AND APPLICATION PROCESS

CHAPTER 11 CERTIFICATION OF A TITLE 14 CFR PART 145 REPAIR STATION

Section 4 Safety Assurance System: Evaluate a Part 145 Repair Station Manual and Quality Control Manual or Revision

2-1291 REPORTING SYSTEM(S).

A. Program Tracking and Reporting Subsystem (PTRS) Activity Codes. Use Program Tracking and Reporting Subsystem (PTRS) activity codes: 3230, 3371, 3372, 5230, 5371, and 5372.

B. Safety Assurance System (SAS) Automation. This section is related to Safety Assurance System (SAS) Element 1.4.3 (RS 4) Manuals.

2-1292 OBJECTIVE. This section provides guidance for evaluating, accepting, or rejecting all Title 14 of the Code of Federal Regulations (14 CFR) part 145 Repair Station Manual (RSM) and/or Quality Control Manual (QCM) original submissions or revisions.

2-1293 GENERAL.

A. SAS. When evaluating a manual or revision, the principal inspector (PI) has the ability to use the SAS Element Design Data Collection Tool (ED DCT), and/or Custom Data Collection Tool (DCT) based on the scope and nature of the revision. When evaluating an RSM and/or QCM multiple elements are involved. See Volume 10.

B. Currency of a QCM. Before issuing an Air Agency Certificate, the applicant's RSM and/or QCM must reflect the applicant's current procedures and be acceptable to the Federal Aviation Administration (FAA).

NOTE: If the training program required by part 145, § 145.163 is included in either of these manuals, that portion must be FAA approved.

C. Revision of an Existing Manual. The certificate-holding district office (CHDO) must be notified when a certificate holder revises an existing manual.

D. Manual Content. The manuals submitted by a certificate holder or applicant may be separate or may be combined into a single manual. The format should be consistent and all regulatory requirements must be included. The aviation safety inspector (ASI) must ensure that the procedures used in the performance of maintenance, preventive maintenance, or alterations are reflected accurately in the manuals. It is expected that, to fully describe the repair station's inspection/quality system, there will be some procedures that may not be regulatory.

E. Original Certification Versus Revision. When evaluating a manual as part of an original certification, each entire manual will be submitted prior to certification. If this task is performed as a revision, only the portion of the manual that is revised must be submitted.

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F. RSM and QCM. Each certificated repair station must maintain a current RSM and QCM.

G. Accessibility of Manual. A certificated repair station's current RSM/QCM must be accessible for use by repair station personnel. All repair station employees on all shifts must have access to the manual, regardless of the media used (electronic, CD-ROM, etc.).

H. CHDO. A certificated repair station must provide to its CHDO the current RSM/QCM in a format acceptable to the FAA. If the manuals or manual submitted are in electronic media format, they must be compatible with FAA electronic capabilities and free of any programs that would adversely affect that capability.

I. Recommendations for Manual Development. There are some recommendations included in this handbook referenced from the current edition of Advisory Circular (AC) 145-9, Guide for Developing and Evaluating Repair Station and Quality Control Manuals, which are not required by the regulations. They have been included to assist the inspector and certificate holder/applicant in developing a more complete description of the repair station's overall functions, responsibilities, and quality control (QC) procedures.

J. Maintenance and Alterations in Accordance With an Air Carrier's Manuals. For certificate holders under 14 CFR parts 121, 125, and 135, and for foreign air carriers or foreign persons operating a U.S. registered aircraft in common carriage under 14 CFR part 129, maintenance, preventive maintenance, and alterations must be performed in accordance with applicable sections of that air carrier's manuals.

K. Principle Inspectors (PI). PIs with certificate management responsibilities for part 145 Repair Stations identifying themselves as a Hazardous Materials (hazmat) Employer, defined in Title 49 of the Code of Federal Regulations (49 CFR) part 171, § 171.8, should ensure the procedures outlined in Volume 2, Chapter 2, Section 6, subparagraph 2-247.A., are included in the RSM/QCM.

2-1294 REPAIR STATION AUTHORIZATION TO MAINTAIN CANADIAN AIRCRAFT.

A. Maintenance, Preventive Maintenance, and Modifications. The repair station may perform maintenance, preventive maintenance, and modifications to aircraft certificated in Canada. To perform this work, the repair station must continue to comply with part 145 and the special conditions imposed by the Bilateral Aviation Safety Agreement (BASA) Maintenance Implementation Procedures (MIP) (BASA/MIPs).

B. Implementing Required Procedures. The MIP agreement requires U.S. air agencies and Canadian Approved Maintenance Organizations (AMO) to develop and implement stringent controls and procedures at their repair stations. These procedures must become a part of the RSM or a supplement to the manual. The requirements for the supplement are contained in the current United States—Canadian BASA/MIPs.

C. Transport Canada Civil Aviation (TCCA) Inspections. The repair station must allow Transport Canada Civil Aviation (TCCA), or the FAA on behalf of TCCA, to inspect it for

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continued compliance with part 145 and MIP special conditions. The repair station must make its manual and the required supplement available for inspection.

NOTE: Investigations and enforcement by the TCCA may be undertaken in accordance with TCCA rules and directives. The repair station must cooperate with any investigation or enforcement action.

2-1295 PREREQUISITES AND COORDINATION REQUIREMENTS. This task may require coordination with other specialty, regional, or district offices.

2-1296 REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions):

- Title 14 CFR Parts 1, 39, 43, 65, 91, 121, 125, 129, 135, and 145;
- Canadian Aviation Regulations (CAR) Parts IV and VII;
- AC 145-9, Guide for Developing and Evaluating Repair Station and Quality Control Manuals;
- AC 43-10, United States—Canadian Bilateral Aviation Safety Agreement Maintenance Implementation Procedures;
- United States—Canadian BASA/MIPs; and
- Volume 2, Chapter 11, Section 2, Procedures for Certificating Part 145 Repair Stations/Satellites Located Within the United States and Its Territories;
- Volume 2, Chapter 11, Section 3, International Field Office Procedures for Certificating/Renewing/Amending a Part 145 Repair Station Located Outside the United States and its Territories and not Under a Maintenance Implementation Procedure; and
- Volume 2, Chapter 11, Section 5, Evaluate Part 145 Repair Station Facilities and Equipment.

B. Forms. None.

C. Job Aids. None.

2-1297 RSM PROCEDURES.

A. Acceptable Formats. Receive the certificate holder or applicant's manual or revision as required by §§ 145.51, 145.207, and 145.211(c).

B. Manual or Revision Content. Review the submitted manual or revision to ensure that it meets the regulatory requirements of §§ 145.209 and 145.211. The manual or revision must include the following:

1) An organizational chart that identifies:

a) Each management position with authority to act on behalf of the repair station.

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1. The organizational chart required by § 145.209 may identify management positions by title only.

2. Management includes, but is not limited to, the executive functions of planning, organizing, coordinating, directing, controlling, and supervising.

3. This does not eliminate the requirement in § 145.51 for an applicant to submit the names and titles of its management and supervisory personnel at the time of application.

b) The area of responsibility assigned to each management position, which is the area(s) in the repair station that the manager is directly accountable for and maintains decision authority over.

c) The duties, responsibilities, and authority of each management position.

2) Procedures for maintaining and revising the rosters required by § 145.161.

NOTE: Within five business days of the revision, the rosters required by this section must reflect changes caused by termination, reassignment, change in duties, scope of assignment, or addition of personnel.

3) A description of a repair station's operations describing how the repair station performs maintenance, where it would start, and how it progresses through the entire repair cycle for approval for return to service. Also include:

a) A description of the housing, which may include dimensions, construction method, heating and ventilation systems, lighting, door openings, and physical address.

b) A description of the facilities including the layout of the shop, hangar, or other work areas.

c) A description of the equipment, tooling, and materials used to perform maintenance.

NOTE: The "description of materials used to perform maintenance" should not be a physical description of the material, but rather an explanation of the repair station's handling and storage of the materials. If materials require specific environmental controls or cannot be stored next to certain chemicals or solvents, these should be identified. For example, it would not be acceptable to store oxygen equipment near petroleum products.

1. If the repair station does not own the equipment, the manual must include procedures that describe how the repair station will obtain the equipment (lease, rentals, etc.). The manual must also include where repair station personnel will use the equipment, how it will train personnel on the proper use of the equipment, and how the repair station will ensure that it addresses calibration issues, if any, after transporting the equipment.

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2. If the repair station chooses to use equipment, tools, or materials other than those recommended by the manufacturer, the manual must include a procedure used by the repair station to determine the equivalency of that equipment, tool, or material.

NOTE: When the repair station is adding a rating or an applicant has applied for certification, all required equipment for the rating it seeks must be in place for inspection by the FAA. This provides the ASI with the opportunity to evaluate its placement and use, and to verify that repair station personnel are trained to operate it.

4) Capability list procedures used to:

a) Revise the capability list provided in § 145.215 and notify the CHDO of revisions to the list, including how often the repair station will notify the CHDO of revisions; and

b) Develop and perform the self evaluation required by § 145.215(c) for revising the capability list, including the methods and frequency of such evaluations and procedures for reporting the results to the appropriate manager for review and action.

5) Procedures for revising the training program and submitting revisions to the CHDO for approval, which should include:

- The title of the person authorized to make a training program revision;
- The method of submitting a revision (electronic, hardcopy, disk, etc.); and
- A procedure for recording a revision and a method of identifying the revised material or text.

6) Procedures for accomplishing work performed at a location other than the repair station's fixed location, which should contain the following:

a) Title of the person responsible for determining that the location is appropriate for the work performed.

b) Title of the person responsible for initiating such work and assigning the personnel necessary to perform inspections and supervise the work.

c) Procedures for communication between responsible repair station personnel at the fixed location and the maintenance personnel working away from the station. This should include the transfer of parts, supplies, tools/equipment, technical data, and trained personnel.

d) Procedures that maintenance personnel will use when away from the repair station if they deviate from established procedures used at the fixed location. The repair station must ensure that maintenance personnel accomplish all work performed while exercising the privileges of its certificate, per the appropriate maintenance manual and its RSM or QCM. The determination for performing work at another location must meet the following requirements:

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1. The work is necessary due to a special circumstance, such as a one-time occurrence, as determined by the FAA; or

2. It is necessary to perform such work on a recurring, but not continuous, basis and the RSM includes the procedures for accomplishing maintenance, preventive maintenance, alterations, or specialized services at a place other than the repair station's fixed location.

NOTE: The FAA must make the determination regarding the performance of work at another location prior to the performance of any maintenance, preventive maintenance, or alterations away from the repair station's fixed location unless the manual includes an acceptable procedure.

7) Procedures for performing maintenance, preventive maintenance, and alterations for certificate holders under parts 121, 125, and 135, and for foreign air carriers or foreign persons operating a U.S. registered aircraft in common carriage under part 129.

a) The FAA requires that maintenance under a Continuous Airworthiness Maintenance Program (CAMP) be performed in accordance with the operator's manual. It is the operator's responsibility to ensure that the work performed on its behalf is in accordance with its approved maintenance program.

b) The certificated repair station that performs maintenance, preventive maintenance, or alterations for an air carrier or commercial operator that has a CAMP under part 121 or 135 must follow the air carrier or commercial operator's maintenance program or applicable sections of its maintenance manual.

c) A certificated repair station that performs inspections for a certificate holder conducting operations under part 125 must follow the operator's FAA approved inspection program.

d) A certificated repair station that performs maintenance, preventive maintenance, or alterations for a foreign air carrier or foreign operator operating a U.S. registered aircraft under part 129 must follow the operator's FAA approved maintenance program.

e) The FAA may authorize a certificated repair station to perform line maintenance on any aircraft of an air carrier certificated under part 121 or 135, or of a foreign air carrier or foreign operator operating a U.S. registered aircraft in common carriage under part 129, provided the certificated repair station:

- Has the appropriate ratings to perform the maintenance or preventive maintenance on transport category aircraft;
- Performs such line maintenance in accordance with the operator's manual and approved maintenance program;

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- Has the necessary equipment, trained personnel, and technical data to perform such line maintenance; and
- Has operations specifications (OpSpecs) that include an authorization to perform line maintenance.

NOTE: A repair station must be appropriately rated to perform line maintenance for an air carrier. This would normally require an airframe rating to accomplish scheduled checks, daily inspections, or the servicing of articles. However, a repair station with the appropriate ratings may accomplish unscheduled maintenance and repairs. This could include avionics facilities limited to avionics functions such as troubleshooting electrical or electronic systems, or replacing defective electronic articles.

8) Procedures for performing maintenance, preventive maintenance, and modifications on Canadian aeronautical products.

a) An FAA certificated repair station may perform maintenance, preventive maintenance, and modifications (with the exception of annual inspections) on a civil aeronautical product under the regulatory control of TCCA. The repair station may approve that product for return to service if the repair station complies with the special conditions stated in the BASA/MIPs between the United States and Canada.

b) In addition to the other requirements specified in the MIPs, a repair station performing maintenance, preventive maintenance, or modifications on aircraft operating in commercial air service under TCCA CAR part IV or VII must include in its manual a supplement describing the procedures listed in the current edition of AC 43-10, Appendix 3, paragraph 3.2, or explain where in the RSM those procedures are described. These procedures must be accepted by the FAA.

9) Procedures for maintaining and revising the contract maintenance information, including the submission of revisions to the CHDO for approval and how often the repair station will notify the FAA of revisions.

a) The FAA must approve the maintenance functions contracted to noncertificated providers.

b) The repair station must maintain a list of each facility that it contracts maintenance functions with, including the type of certificate and ratings (if any) held by each facility.

c) The manual does not need to include the maintenance function list, but the manual should include the location or office where the repair station maintains the list.

NOTE: Maintenance functions are a step or series of steps in the process of performing maintenance, preventive maintenance, or alterations that result in approving an article for return to service. It is not the intent of this rule to create “virtual repair stations” that provide only an approval for return to service. ASIs

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must evaluate the amount of work a repair station desires to contract out versus the work it performs in house.

10) A description of the recordkeeping system used by the repair station to obtain, store, and retrieve the records required by part 43. These records must be in English.

11) Procedures for revising the RSM and notifying its CHDO of revisions to the manual, including how often the repair station will notify the FAA of revisions. The procedure must include:

- The title of the person authorized to make a revision;
- The method of submitting a revision (electronic, hard copy, disk, etc.);
- A procedure for recording a revision and a method of identifying the revised material or text; and
- A description of the system used to identify and control sections of the RSM.

C. Service Difficulty Reports (SDR) and Suspected Unapproved Parts (SUP). The manual should include the following:

1) Procedures for submitting a Service Difficulty Report (SDR); a certificated repair station must report to the FAA within 96 hours after it discovers any serious failure, malfunction, or defect of an article in accordance with § 145.221 and in a format acceptable to the FAA. This is usually in the form of an SDR. If the repair station performs maintenance, preventive maintenance, or alterations for an air carrier, the manual should also contain procedures on how it will notify the operator when submitting reports. The reporting requirement of part 121, § 121.703(d) will be served when an aircraft is scheduled out of service for more than 72 hours due to maintenance, preventive maintenance, or alteration activities. Occurrences and deficiencies must be reported 96 hours after the work on the aircraft is approved for return to service, unless the condition has been reported under another part or section of 14 CFR (e.g., 14 CFR part 21, § 21.3 or § 145.221).

2) Procedures for detecting and reporting suspected unapproved parts (SUP).

2-1298 QCM PROCEDURES.

NOTE: The QCM may be separate from the RSM or included in that manual as a separate section or volume.

A. Documentation, Inspections, and Training. A certificated repair station must prepare and keep current a QCM in a format acceptable to the FAA. Depending upon the size, complexity, and rating(s) of the repair station, that manual should include a description of the system and procedures used for:

1) Receiving and documenting articles, standard parts, and raw materials.

2) Performing incoming inspections of raw materials and standard parts that check for:

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- Proper documentation, identification, and traceability;
- Conformity to a specification and acceptable quality;
- Shelf life;
- Contamination;
- Shipping damage; and
- State of preservation.

3) Performing a preliminary inspection of all articles that are maintained or altered to check for:

- Proper documentation, identification, and traceability;
- Shipping damage and contamination;
- State of preservation;
- Life limits;
- Airworthiness Directives (AD) and Service Bulletins (SB);
- Functional test or teardown inspections;
- FAA approval/acceptance of articles; and
- Determination of what repairs are necessary.

4) Inspecting all articles that have been involved in an accident for hidden damage before maintenance, preventive maintenance, or alteration is performed. Ensure that items are disassembled as necessary and inspected for hidden damage in adjacent areas.

5) Performing in-progress inspections to ensure inspections, testing, and/or calibration are conducted at various stages while the work is in progress.

6) Performing final inspections and approvals for return to service.

a) Ensures that inspection, testing, and/or calibration of articles, including documentation, is accomplished at the completion of maintenance or an alteration.

b) The manual must include a procedure for approval for return to service.

7) Ensuring continuity of inspection responsibility.

a) Include procedures for ensuring that the responsibilities of any inspector are properly performed in their absence.

b) If the repair station has multiple shifts, include procedures to ensure the continuing responsibility for maintenance in progress through the use of a status book, shift turnover log, or similar documents.

8) Calibrating measuring and test equipment used in maintaining articles, including the intervals at which the equipment will be calibrated.

9) Taking corrective action on deficiencies related to repair station operation.

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a) Section 145.211(c)(1)(ix) states that the QCM must include procedures used for taking corrective action on deficiencies. A corrective action is taken to remedy an undesirable situation. The correction of deficiencies is normally an integral part of a repair station's improvement process, and could include revisions to procedures that were not working properly (Refer to AC 145-9, paragraph 4-13 for additional guidance.).

NOTE: The repair station is not required at this time to have an Internal Evaluation Program (IEP), quality assurance (QA) program, or a continuous improvement program.

b) Corrective action requires that a fact-based investigation determine the root cause or causes to eliminate them. Corrective action would be applicable in two situations: before the article is approved for return to service and after the article has been approved for return to service.

c) If a deficiency is found before the article is approved for return to service, the repair station should follow its procedures describing how rework will be accomplished. If the deficiency is noted after the article is approved for return to service, the repair station should follow its procedures to notify the CHDO and the owner/operator of any potential problems and recall any unairworthy parts or products. The objective of the investigation into the cause of the deficiency and the corrective actions taken is to eliminate any potential safety threats posed by unapproved or improperly maintained parts or products and to prevent a recurrence of the same or similar problems.

NOTE: When the CHDO receives notification of a deficiency found after the article is approved for return to service, it shall be investigated for possible violations of parts 43 and/or 145. The investigation should be conducted in accordance with the current edition of FAA Order 2150.3, FAA Compliance and Enforcement Program. If improper maintenance is found, the ASI shall complete the PTRS records using code 3776/5776 as applicable. If unapproved parts are found, the ASI shall complete the PTRS records using code 3775/5775 as applicable. If the unapproved parts lead to an outside facility that manufactured the parts, an FAA Form 8120-11, Suspected Unapproved Parts Report, should be filed so an Aircraft Certification Service (AIR) investigation can be conducted. If the deficiency is found as a result of an inspection, audit, or evaluation of a maintenance facility located outside of the region, the inspector should contact the region or Flight Standards District Office (FSDO) responsible for the facility that completed the work. The investigating inspector completing the investigation on that facility shall complete the PTRS records using code 3776/5776, as applicable.

d) The procedures in the QCM should include a system for documenting any deficiencies and the corrective actions taken to prevent a recurrence. The system should let employees track any open corrective action requests and the date the corrective action is due. The program should also be tracked to include audits of the corrective action(s) taken to ensure it was effective. These audits should also be tracked to ensure that they are completed in a timely fashion.

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10) Establishing and maintaining the proficiency of inspection personnel.

a) The procedure should ensure that inspection personnel are familiar with the applicable regulations and are proficient at inspecting the articles they are assigned to inspect.

b) Testing, formal training, recurrent training, or a combination of these methods could be used to maintain the proficiency of inspection personnel.

11) Establishing and maintaining current technical data for maintaining articles.

12) Revising the repair station's quality manual and notifying its CHDO of revisions to the manual, including how often the FAA will be notified of revisions. The procedure must include:

- The title of the person authorized to make a revision;
- The method of submitting revisions (electronic, SAS external portal, hardcopy, disk, etc.); and
- A procedure for recording revisions and a system for identifying revised material or text.

13) Qualifying and surveying noncertificated persons who perform maintenance, preventive maintenance, or alterations for the repair station. A certificated repair station may contract a maintenance function pertaining to an article to a noncertificated person, provided that:

- The noncertificated person follows a QC system equivalent to the system followed by the certificated repair station;
- The certificated repair station remains directly in charge of the work performed by the noncertificated person;
- The certificated repair station verifies, by testing and/or inspecting, that the work has been performed satisfactorily and that the article is Airworthy before approving it for return to service; and
- The noncertificated person's contract allows the FAA to inspect or observe work being performed on any articles for the certificated repair station.

NOTE: The ability to inspect a noncertificated person can only be accomplished while the contract is in force. This requirement does not give ASIs access to non-FAA certificated facilities if there is no work being performed under contract for a certificated repair station.

B. Manual References. Where applicable, the manual should contain references to the instructions for continued airworthiness (ICA), maintenance manuals, inspection standards, or other approved or accepted data specific to the article being maintained.

C. Inspection and Maintenance Forms. A sample of each of the inspection and maintenance forms used in the performance of maintenance and the instructions for completing those forms.

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NOTE: These forms may be addressed in a separate accepted manual that is submitted to the CHDO and maintained in current condition by the repair station.

2-1299 TASK OUTCOMES.

A. Complete the PTRS Record.

B. Follow SAS Guidance Modules 4 and 5.

NOTE: Initial certification will require the certificate holder/applicant to use the SAS external portal to submit all applicable documents. Existing certificate holders have the option to use the SAS external portal for document transmittal. Refer to the SAS external portal users guide for more information.

C. Complete the Task. Completion of this task will result in the following actions:

- If no regulatory conflicts were found, the FSDO may send a transmittal document acknowledging receipt of the manuals.
- If conflicts with the rule are noted, the PI will detail those discrepancies in writing to the certificate holder.

NOTE: ASIs may inform the certificate holder that no deficiencies were noted. This should not be mistaken as an “acceptance” of the manuals.

NOTE: Federal agencies can no longer refuse electronic versions of manuals, forms, record systems, etc. Federal law prohibits agencies from making the use of electronic media more difficult, or from requiring additional steps or procedures for users of electronic media. Therefore, all repair station document submissions must be accompanied by a transmittal document that describes the submission and is signed by the appropriate manager.

1) Approve the training program or a revision by sending the certificate holder a letter indicating the date; document, manual, or revision number; and an approval statement. The PI should sign the transmittal document.

2) Accept the Canadian supplement or revision to the appropriate manual sections by sending the certificate holder a letter indicating the date, the document, manual, or revision number, and an acceptance statement. The ASI should sign the transmittal document. If the repair station elects to imbed their Canadian MIP requirements in their manual, the acceptance conveyance letter must quote each section of the manual where the Canadian requirements are found. The ASI is only accepting the Canadian requirements of the manual.

NOTE: A certificate holder using electronic media such as CD-ROM disks, local area network (LAN)-based manual systems, or internet based manual systems may scan the cover letters and insert them electronically into the applicable document if they do not wish to maintain a file of acceptance or approval letters.

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D. Use of Electronic Transmissions (Email or Facsimile (fax)). Email or facsimile (fax) responses are an acceptable alternative to the cover letter if the repair station is equipped to transmit and receive any necessary attachments; this may include the use of electronic signatures. This method should be addressed in the repair station's procedures and found acceptable to the FAA.

E. Rejection. Reject the manual(s) or revisions by doing the following:

1) Initiate a cover letter indicating the date and document, manual, or revision number of the document or manual being rejected.

2) Return all copies to the applicant with an explanation of discrepancies that must be corrected and instructions for resubmitting the documents in order to proceed with the certification or revision process.

F. Posting Revisions. The applicant/certificate holder must provide revisions to the RSM and/or QCM, and the approved training program and/or manual, to the CHDO. The PI will file the revision in the certificate holder/applicant's office file.

1) If in a paper revision, the ASI will remove the affected pages and insert the revised pages in the manuals or the training program. The ASI will update the manual control system and file the cover letters in the appropriate office file.

2) If in an electronic format, the ASI will replace the outdated office copy version with the current submission in the format it was submitted.

G. Document the Task. File all supporting documents in the certificate holder/applicant's office file.

2-1300 FUTURE ACTIVITIES. Follow SAS guidance.

RESERVED. Paragraphs 2-1301 through 2-1315.

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VOLUME 2 AIR OPERATOR AND AIR AGENCY CERTIFICATION AND APPLICATION PROCESS

CHAPTER 11 CERTIFICATION OF A TITLE 14 CFR PART 145 REPAIR STATION

Section 4 Safety Assurance System: Evaluate a Part 145 Repair Station Manual and Quality Control Manual or Revision

2-1291 REPORTING SYSTEM(S).

A. Program Tracking and Reporting Subsystem (PTRS) Activity Codes. Use Program Tracking and Reporting Subsystem (PTRS) activity codes: 3230, 3371, 3372, 5230, 5371, and 5372.

B. Safety Assurance System (SAS) Automation. This section is related to SAS Element 1.4.3 (RS 4) Manuals.

2-1292 OBJECTIVE. This section provides guidance for evaluating, accepting, or rejecting all Title 14 of the Code of Federal Regulations (14 CFR) part 145 Repair Station Manual (RSM) and/or Quality Control Manual (QCM) original submissions or revisions.

2-1293 GENERAL.

A. SAS. When evaluating a manual or revision, the principal inspector (PI) has the ability to use the SAS Element Design Data Collection Tool (ED DCT), and/or Custom Data Collection Tool (DCT) based on the scope and nature of the revision. When evaluating an RSM and/or QCM multiple elements are involved. See Volume 10.

B. Currency of a QCM. Before issuing an Air Agency Certificate, the applicant's RSM and/or QCM must reflect the applicant's current procedures and be acceptable to the Federal Aviation Administration (FAA).

NOTE: If the training program required by part 145, § 145.163 is included in either of these manuals, that portion must be FAA approved.

C. Revision of an Existing Manual. The certificate-holding district office (CHDO) must be notified when a certificate holder revises an existing manual.

D. Manual Content. The manuals submitted by a certificate holder or applicant may be separate or may be combined into a single manual. The format should be consistent and all regulatory requirements must be included. The aviation safety inspector (ASI) must ensure that the procedures used in the performance of maintenance, preventive maintenance, or alterations are reflected accurately in the manuals. It is expected that, to fully describe the repair station's inspection/quality system, there will be some procedures that may not be regulatory.

E. Original Certification Versus Revision. When evaluating a manual as part of an original certification, each entire manual will be submitted prior to certification. If this task is performed as a revision, only the portion of the manual that is revised must be submitted.

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F. RSM and QCM. Each certificated repair station must maintain a current RSM and QCM.

G. Accessibility of Manual. A certificated repair station's current RSM/QCM must be accessible for use by repair station personnel. All repair station employees on all shifts must have access to the manual, regardless of the media used (electronic, CD-ROM, etc.).

H. CHDO. A certificated repair station must provide to its CHDO the current RSM/QCM in a format acceptable to the FAA. If the manuals or manual submitted are in electronic media format, they must be compatible with FAA electronic capabilities and free of any programs that would adversely affect that capability.

I. Recommendations for Manual Development. There are some recommendations included in this handbook referenced from the current edition of Advisory Circular (AC) 145-9, Guide for Developing and Evaluating Repair Station and Quality Control Manuals, which are not required by the regulations. They have been included to assist the inspector and certificate holder/applicant in developing a more complete description of the repair station's overall functions, responsibilities, and quality control (QC) procedures.

J. Maintenance and Alterations in Accordance With an Air Carrier's Manuals. For certificate holders under 14 CFR parts 121, 125, and 135, and for foreign air carriers or foreign persons operating a U.S. registered aircraft in common carriage under 14 CFR part 129, maintenance, preventive maintenance, and alterations must be performed in accordance with applicable sections of that air carrier's manuals.

K. Principle Inspectors (PI). PIs with certificate management responsibilities for part 145 Repair Stations identifying themselves as a Hazardous Materials (hazmat) Employer, defined in Title 49 of the Code of Federal Regulations (49 CFR) part 171, § 171.8, should ensure the procedures outlined in Volume 2, Chapter 2, Section 6, subparagraph 2-247A, are included in the RSM/QCM.

2-1294 REPAIR STATION AUTHORIZATION TO MAINTAIN CANADIAN AIRCRAFT.

A. Maintenance, Preventive Maintenance, and Modifications. The repair station may perform maintenance, preventive maintenance, and modifications to aircraft certificated in Canada. To perform this work, the repair station must continue to comply with part 145 and the special conditions imposed by the Bilateral Aviation Safety Agreement (BASA) Maintenance Implementation Procedures (MIP) (BASA/MIPs).

B. Implementing Required Procedures. The MIP agreement requires U.S. air agencies and Canadian Approved Maintenance Organizations (AMO) to develop and implement stringent controls and procedures at their repair stations. These procedures must become a part of the RSM or a supplement to the manual. The requirements for the supplement are contained in the current United States—Canadian BASA/MIPs.

C. Transport Canada Civil Aviation (TCCA) Inspections. The repair station must allow TCCA, or the FAA on behalf of TCCA, to inspect it for continued compliance with

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part 145 and MIP special conditions. The repair station must make its manual and the required supplement available for inspection.

NOTE: Investigations and enforcement by the TCCA may be undertaken in accordance with TCCA rules and directives. The repair station must cooperate with any investigation or enforcement action.

2-1295 PREREQUISITES AND COORDINATION REQUIREMENTS. This task may require coordination with other specialty, regional, or district offices.

2-1296 REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions):

- Title 14 CFR Parts 1, 39, 43, 65, 91, 121, 125, 129, 135, and 145.
- Canadian Aviation Regulations (CAR) Parts IV and VII.
- AC 145-9, Guide for Developing and Evaluating Repair Station and Quality Control Manuals.
- AC 43-10, United States—Canadian Bilateral Aviation Safety Agreement Maintenance Implementation Procedures.
- United States—Canadian BASA/MIPs.
- Volume 2, Chapter 11, Section 2, Procedures for Certificating Part 145 Repair Stations/Satellites Located Within the United States and Its Territories.
- Volume 2, Chapter 11, Section 3, International Field Office Procedures for Certificating/Renewing/Amending a Part 145 Repair Station Located Outside the United States and its Territories and not Under a Maintenance Implementation Procedure.
- Volume 2, Chapter 11, Section 5, Safety Assurance System: Evaluate Part 145 Repair Station Facilities and Equipment.

B. Forms. None.

C. Job Aids. None.

2-1297 RSM PROCEDURES.

A. Acceptable Formats. Receive the certificate holder or applicant's manual or revision as required by §§ 145.51, 145.207, and 145.211(c).

B. Manual or Revision Content. Review the submitted manual or revision to ensure that it meets the regulatory requirements of §§ 145.209 and 145.211. The manual or revision must include the following:

1) An organizational chart that identifies:

a) Each management position with authority to act on behalf of the repair station.

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1. The organizational chart required by § 145.209 may identify management positions by title only.

2. Management includes, but is not limited to, the executive functions of planning, organizing, coordinating, directing, controlling, and supervising.

3. This does not eliminate the requirement in § 145.51 for an applicant to submit the names and titles of its management and supervisory personnel at the time of application.

b) The area of responsibility assigned to each management position, which is the area(s) in the repair station that the manager is directly accountable for and maintains decision authority over.

c) The duties, responsibilities, and authority of each management position.

2) Procedures for maintaining and revising the rosters required by § 145.161.

NOTE: Within five business days of the revision, the rosters required by this section must reflect changes caused by termination, reassignment, change in duties, scope of assignment, or addition of personnel.

3) A description of a repair station's operations describing how the repair station performs maintenance, where it would start, and how it progresses through the entire repair cycle for approval for return to service. Also include:

a) A description of the housing, which may include dimensions, construction method, heating and ventilation systems, lighting, door openings, and physical address.

b) A description of the facilities including the layout of the shop, hangar, or other work areas.

c) A description of the equipment, tooling, and materials used to perform maintenance.

NOTE: The "description of materials used to perform maintenance" should not be a physical description of the material, but rather an explanation of the repair station's handling and storage of the materials. If materials require specific environmental controls or cannot be stored next to certain chemicals or solvents, these should be identified. For example, it would not be acceptable to store oxygen equipment near petroleum products.

1. If the repair station does not own the equipment, the manual must include procedures that describe how the repair station will obtain the equipment (lease, rentals, etc.). The manual must also include where repair station personnel will use the equipment, how it will train personnel on the proper use of the equipment, and how the repair station will ensure that it addresses calibration issues, if any, after transporting the equipment.

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2. If the repair station chooses to use equipment, tools, or materials other than those recommended by the manufacturer, the manual must include a procedure used by the repair station to determine the equivalency of that equipment, tool, or material.

NOTE: When the repair station is adding a rating or an applicant has applied for certification, all required equipment for the rating it seeks must be in place for inspection by the FAA. This provides the ASI with the opportunity to evaluate its placement and use, and to verify that repair station personnel are trained to operate it.

4) Capability list procedures used to:

a) Revise the capability list provided in § 145.215 and notify the CHDO of revisions to the list, including how often the repair station will notify the CHDO of revisions; and

b) Develop and perform the self-evaluation required by § 145.215(c) for revising the capability list, including the methods and frequency of such evaluations and procedures for reporting the results to the appropriate manager for review and action.

5) Procedures for revising the training program and submitting revisions to the CHDO for approval, which should include:

- The title of the person authorized to make a training program revision;
- The method of submitting a revision (electronic, hardcopy, disk, etc.); and
- A procedure for recording a revision and a method of identifying the revised material or text.

6) Procedures for accomplishing work performed at a location other than the repair station's fixed location, which should contain the following:

a) Title of the person responsible for determining that the location is appropriate for the work performed.

b) Title of the person responsible for initiating such work and assigning the personnel necessary to perform inspections and supervise the work.

c) Procedures for communication between responsible repair station personnel at the fixed location and the maintenance personnel working away from the station. This should include the transfer of parts, supplies, tools/equipment, technical data, and trained personnel.

d) Procedures that maintenance personnel will use when away from the repair station if they deviate from established procedures used at the fixed location. The repair station must ensure that maintenance personnel accomplish all work performed while exercising the privileges of its certificate, per the appropriate maintenance manual and its RSM or QCM. The determination for performing work at another location must meet the following requirements:

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1. The work is necessary due to a special circumstance, such as a one-time occurrence, as determined by the FAA; or

2. It is necessary to perform such work on a recurring, but not continuous, basis and the RSM includes the procedures for accomplishing maintenance, preventive maintenance, alterations, or specialized services at a place other than the repair station's fixed location.

NOTE: The FAA must make the determination regarding the performance of work at another location prior to the performance of any maintenance, preventive maintenance, or alterations away from the repair station's fixed location unless the manual includes an acceptable procedure.

7) Procedures for performing maintenance, preventive maintenance, and alterations for certificate holders under parts 121, 125, and 135, and for foreign air carriers or foreign persons operating a U.S.-registered aircraft in common carriage under part 129.

a) The FAA requires that maintenance under a Continuous Airworthiness Maintenance Program (CAMP) be performed in accordance with the operator's manual. It is the operator's responsibility to ensure that the work performed on its behalf is in accordance with its approved maintenance program.

b) The certificated repair station that performs maintenance, preventive maintenance, or alterations for an air carrier or commercial operator that has a CAMP under part 121 or 135 must follow the air carrier or commercial operator's maintenance program or applicable sections of its maintenance manual.

c) A certificated repair station that performs inspections for a certificate holder conducting operations under part 125 must follow the operator's FAA-approved inspection program.

d) A certificated repair station that performs maintenance, preventive maintenance, or alterations for a foreign air carrier or foreign operator operating a U.S.-registered aircraft under part 129 must follow the operator's FAA-approved maintenance program.

e) The FAA may authorize a certificated repair station to perform line maintenance on any aircraft of an air carrier certificated under part 121 or 135, or of a foreign air carrier or foreign operator operating a U.S.-registered aircraft in common carriage under part 129, provided the certificated repair station:

- Has the appropriate ratings to perform the maintenance or preventive maintenance on transport category aircraft;
- Performs such line maintenance in accordance with the operator's manual and approved maintenance program;

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- Has the necessary equipment, trained personnel, and technical data to perform such line maintenance; and
- Has operations specifications (OpSpecs) that include an authorization to perform line maintenance.

NOTE: A repair station must be appropriately rated to perform line maintenance for an air carrier. This would normally require an airframe rating to accomplish scheduled checks, daily inspections, or the servicing of articles. However, a repair station with the appropriate ratings may accomplish unscheduled maintenance and repairs. This could include avionics facilities limited to avionics functions such as troubleshooting electrical or electronic systems, or replacing defective electronic articles.

8) Procedures for performing maintenance, preventive maintenance, and modifications on Canadian aeronautical products.

a) An FAA certificated repair station may perform maintenance, preventive maintenance, and modifications (with the exception of annual inspections) on a civil aeronautical product under the regulatory control of TCCA. The repair station may approve that product for return to service if the repair station complies with the special conditions stated in the BASA/MIPs between the United States and Canada.

b) In addition to the other requirements specified in the MIPs, a repair station performing maintenance, preventive maintenance, or modifications on aircraft operating in commercial air service under TCCA CAR part IV or VII must include in its manual a supplement describing the procedures listed in the current edition of AC 43-10, Appendix 3, paragraph 3.2, or explain where in the RSM those procedures are described. These procedures must be accepted by the FAA.

9) Procedures for maintaining and revising the contract maintenance information, including the submission of revisions to the CHDO for approval and how often the repair station will notify the FAA of revisions.

a) The FAA must approve the maintenance functions contracted to noncertificated providers.

b) The repair station must maintain a list of each facility that it contracts maintenance functions with, including the type of certificate and ratings (if any) held by each facility.

c) The manual does not need to include the maintenance function list, but the manual should include the location or office where the repair station maintains the list.

NOTE: Maintenance functions are a step or series of steps in the process of performing maintenance, preventive maintenance, or alterations that result in approving an article for return to service. It is not the intent of this rule to create “virtual repair stations” that provide only an approval for return to service. ASIs

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must evaluate the amount of work a repair station desires to contract out versus the work it performs in house.

10) A description of the recordkeeping system used by the repair station to obtain, store, and retrieve the records required by part 43. These records must be in English.

11) Procedures for revising the RSM and notifying its CHDO of revisions to the manual, including how often the repair station will notify the FAA of revisions. The procedure must include:

- The title of the person authorized to make a revision;
- The method of submitting a revision (electronic, hardcopy, disk, etc.);
- A procedure for recording a revision and a method of identifying the revised material or text; and
- A description of the system used to identify and control sections of the RSM.

C. Service Difficulty Reports (SDR) and Suspected Unapproved Parts (SUP). The manual should include the following:

1) Procedures for submitting an SDR; a certificated repair station must report to the FAA within 96 hours after it discovers any serious failure, malfunction, or defect of an article in accordance with § 145.221 and in a format acceptable to the FAA. This is usually in the form of an SDR. If the repair station performs maintenance, preventive maintenance, or alterations for an air carrier, the manual should also contain procedures on how it will notify the operator when submitting reports. The reporting requirement of part 121, § 121.703(d) will be served when an aircraft is scheduled out of service for more than 72 hours due to maintenance, preventive maintenance, or alteration activities. Occurrences and deficiencies must be reported 96 hours after the work on the aircraft is approved for return to service, unless the condition has been reported under another part or section of 14 CFR (e.g., 14 CFR part 21, § 21.3 or § 145.221).

2) Procedures for detecting and reporting SUPs.

2-1298 QCM PROCEDURES.

NOTE: The QCM may be separate from the RSM or included in that manual as a separate section or volume.

A. Documentation, Inspections, and Training. A certificated repair station must prepare and keep current a QCM in a format acceptable to the FAA. Depending upon the size, complexity, and rating(s) of the repair station, that manual should include a description of the system and procedures used for:

1) Receiving and documenting articles, standard parts, and raw materials.

2) Performing incoming inspections of raw materials and standard parts that check for:

- Proper documentation, identification, and traceability;

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- Conformity to a specification and acceptable quality;
- Shelf life;
- Contamination;
- Shipping damage; and
- State of preservation.

3) Performing a preliminary inspection of all articles that are maintained or altered to check for:

- Proper documentation, identification, and traceability;
- Shipping damage and contamination;
- State of preservation;
- Life limits;
- Airworthiness Directives (AD) and Service Bulletins (SB);
- Functional test or teardown inspections;
- FAA approval/acceptance of articles; and
- Determination of what repairs are necessary.

4) Inspecting all articles that have been involved in an accident for hidden damage before maintenance, preventive maintenance, or alteration is performed. Ensure that items are disassembled as necessary and inspected for hidden damage in adjacent areas.

5) Performing in-progress inspections to ensure inspections, testing, and/or calibration are conducted at various stages while the work is in progress.

6) Performing final inspections and approvals for return to service.

a) Ensures that inspection, testing, and/or calibration of articles, including documentation, is accomplished at the completion of maintenance or an alteration.

b) The manual must include a procedure for approval for return to service.

7) Ensuring continuity of inspection responsibility.

a) Include procedures for ensuring that the responsibilities of any inspector are properly performed in their absence.

b) If the repair station has multiple shifts, include procedures to ensure the continuing responsibility for maintenance in progress through the use of a status book, shift turnover log, or similar documents.

8) Calibrating measuring and test equipment used in maintaining articles, including the intervals at which the equipment will be calibrated.

9) Taking corrective action on deficiencies related to repair station operation.

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a) Section 145.211(c)(1)(ix) states that the QCM must include procedures used for taking corrective action on deficiencies. A corrective action is taken to remedy an undesirable situation. The correction of deficiencies is normally an integral part of a repair station's improvement process, and could include revisions to procedures that were not working properly (Refer to AC 145-9, paragraph 4-13 for additional guidance.).

NOTE: The repair station is not required at this time to have an Internal Evaluation Program (IEP), quality assurance (QA) program, or a continuous improvement program.

b) Corrective action requires that a fact-based investigation determine the root cause or causes to eliminate them. Corrective action would be applicable in two situations: before the article is approved for return to service and after the article has been approved for return to service.

c) If a deficiency is found before the article is approved for return to service, the repair station should follow its procedures describing how rework will be accomplished. If the deficiency is noted after the article is approved for return to service, the repair station should follow its procedures to notify the CHDO and the owner/operator of any potential problems and recall any unairworthy parts or products. The objective of the investigation into the cause of the deficiency and the corrective actions taken is to eliminate any potential safety threats posed by unapproved or improperly maintained parts or products and to prevent a recurrence of the same or similar problems.

NOTE: When the CHDO receives notification of a deficiency found after the article is approved for return to service, the PI must ensure the event is reviewed for possible noncompliance of parts 43 and/or 145. The review should be conducted using the AFS Compliance Action Decision Procedure in Volume 14, Chapter 1, Section 2. If improper maintenance is found, the ASI shall complete the PTRS records using code 3776/5776 as applicable. If unapproved parts are found, the ASI shall complete the PTRS records using code 3775/5775 as applicable. If the unapproved parts lead to an outside facility that manufactured the parts, an FAA Form 8120-11, Suspected Unapproved Parts Report, should be filed so an Aircraft Certification Service (AIR) investigation can be conducted. If the deficiency is found as a result of an inspection, audit, or evaluation of a maintenance facility located outside of the region, the inspector should contact the region or Flight Standards District Office (FSDO) responsible for the facility that completed the work. The investigating inspector completing the investigation on that facility shall complete the PTRS records using code 3776/5776, as applicable.

d) The procedures in the QCM should include a system for documenting any deficiencies and the corrective actions taken to prevent a recurrence. The system should let employees track any open corrective action requests and the date the corrective action is due. The program should also be tracked to include audits of the corrective action(s) taken to ensure it was effective. These audits should also be tracked to ensure that they are completed in a timely fashion.

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10) Establishing and maintaining the proficiency of inspection personnel.

a) The procedure should ensure that inspection personnel are familiar with the applicable regulations and are proficient at inspecting the articles they are assigned to inspect.

b) Testing, formal training, recurrent training, or a combination of these methods could be used to maintain the proficiency of inspection personnel.

11) Establishing and maintaining current technical data for maintaining articles.

12) Revising the repair station's quality manual and notifying its CHDO of revisions to the manual, including how often the FAA will be notified of revisions. The procedure must include:

- The title of the person authorized to make a revision;
- The method of submitting revisions (electronic, SAS external portal, hardcopy, disk, etc.); and
- A procedure for recording revisions and a system for identifying revised material or text.

13) Qualifying and surveying noncertificated persons who perform maintenance, preventive maintenance, or alterations for the repair station. A certificated repair station may contract a maintenance function pertaining to an article to a noncertificated person, provided that:

- The noncertificated person follows a QC system equivalent to the system followed by the certificated repair station;
- The certificated repair station remains directly in charge of the work performed by the noncertificated person;
- The certificated repair station verifies, by testing and/or inspecting, that the work has been performed satisfactorily and that the article is Airworthy before approving it for return to service; and
- The noncertificated person's contract allows the FAA to inspect or observe work being performed on any articles for the certificated repair station.

NOTE: The ability to inspect a noncertificated person can only be accomplished while the contract is in force. This requirement does not give ASIs access to non-FAA certificated facilities if there is no work being performed under contract for a certificated repair station.

B. Manual References. Where applicable, the manual should contain references to the instructions for continued airworthiness (ICA), maintenance manuals, inspection standards, or other approved or accepted data specific to the article being maintained.

C. Inspection and Maintenance Forms. A sample of each of the inspection and maintenance forms used in the performance of maintenance and the instructions for completing those forms.

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NOTE: These forms may be addressed in a separate accepted manual that is submitted to the CHDO and maintained in current condition by the repair station.

2-1299 TASK OUTCOMES.

A. Complete the PTRS Record.

B. Follow SAS Guidance Modules 4 and 5.

NOTE: Initial certification will require the certificate holder/applicant to use the SAS external portal to submit all applicable documents. Existing certificate holders have the option to use the SAS external portal for document transmittal. Refer to the SAS external portal users guide for more information.

C. Complete the Task. Completion of this task will result in the following actions:

- If no regulatory conflicts were found, the FSDO may send a transmittal document acknowledging receipt of the manuals.
- If conflicts with the rule are noted, the PI will detail those discrepancies in writing to the certificate holder.

NOTE: ASIs may inform the certificate holder that no deficiencies were noted. This should not be mistaken as an “acceptance” of the manuals.

NOTE: Federal agencies can no longer refuse electronic versions of manuals, forms, record systems, etc. Federal law prohibits agencies from making the use of electronic media more difficult, or from requiring additional steps or procedures for users of electronic media. Therefore, all repair station document submissions must be accompanied by a transmittal document that describes the submission and is signed by the appropriate manager.

1) Approve the training program or a revision by sending the certificate holder a letter indicating the date; document, manual, or revision number; and an approval statement. The PI should sign the transmittal document.

2) Accept the Canadian supplement or revision to the appropriate manual sections by sending the certificate holder a letter indicating the date, the document, manual, or revision number, and an acceptance statement. The ASI should sign the transmittal document. If the repair station elects to imbed their Canadian MIP requirements in their manual, the acceptance conveyance letter must quote each section of the manual where the Canadian requirements are found. The ASI is only accepting the Canadian requirements of the manual.

NOTE: A certificate holder using electronic media such as CD-ROM disks, local area network (LAN)-based manual systems, or internet based manual systems may scan the cover letters and insert them electronically into the applicable document if they do not wish to maintain a file of acceptance or approval letters.

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D. Use of Electronic Transmissions (Email or Facsimile (fax)). Email or fax responses are an acceptable alternative to the cover letter if the repair station is equipped to transmit and receive any necessary attachments; this may include the use of electronic signatures. This method should be addressed in the repair station's procedures and found acceptable to the FAA.

E. Rejection. Reject the manual(s) or revisions by doing the following:

1) Initiate a cover letter indicating the date and document, manual, or revision number of the document or manual being rejected.

2) Return all copies to the applicant with an explanation of discrepancies that must be corrected and instructions for resubmitting the documents in order to proceed with the certification or revision process.

F. Posting Revisions. The applicant/certificate holder must provide revisions to the RSM and/or QCM, and the approved training program and/or manual, to the CHDO. The PI will file the revision in the certificate holder/applicant's office file.

1) If in a paper revision, the ASI will remove the affected pages and insert the revised pages in the manuals or the training program. The ASI will update the manual control system and file the cover letters in the appropriate office file.

2) If in an electronic format, the ASI will replace the outdated office copy version with the current submission in the format it was submitted.

G. Document the Task. File all supporting documents in the certificate holder/applicant's office file.

2-1300 FUTURE ACTIVITIES. Follow SAS guidance.

RESERVED. Paragraphs 2-1301 through 2-1315.

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VOLUME 2 AIR OPERATOR AND AIR AGENCY CERTIFICATION AND APPLICATION PROCESS

CHAPTER 11 CERTIFICATION OF A TITLE 14 CFR PART 145 REPAIR STATION

Section 5 Safety Assurance System: Evaluate Part 145 Repair Station Facilities and Equipment

2-1316 REPORTING SYSTEM(S).

A. Program Tracking and Reporting Subsystem (PTRS) Activity Codes. Use PTRS codes: 3378 and 5378.

B. Safety Assurance System (SAS) Automation. This section is related to SAS Elements 4.5.4 (RS 5), Housing and Facilities and 4.7.3 (RS 6), Tools and Equipment.

2-1317 OBJECTIVE. This section provides evaluation and inspection guidance for a Title 14 of the Code of Federal Regulations (14 CFR) part 145 repair station for original certification, change in rating, change in location, or adding facilities.

2-1318 GENERAL.

A. SAS. Certification of part 145 repair stations will be completed using the SAS. See Volume 2, Chapter 11, Section 1, and Volume 10, for further guidance.

B. Suitability of Permanent Housing or Other Facilities. When determining the suitability of permanent housing or other facilities used for the maintenance of an aeronautical article, the inspector should consider climatic conditions. This is to determine if high or low temperatures, excessive dust or sand, or other conditions will adversely affect worker efficiency. The inspector should also consider the maintenance being performed to determine if work processes are adversely affected by environmental conditions.

C. Application Format. Applications for a repair station certificate, amendment to, transfer of, or an additional rating must be made in a format acceptable to the Federal Aviation Administration (FAA) and conform to the requirements of part 145. Additional guidance for the certification and operation of a part 145 repair station may be found in other chapters of this order as well as the current edition of Advisory Circular (AC) 145-9, Guide for Developing and Evaluating Repair Station and Quality Control Manuals.

2-1319 SATELLITE REPAIR STATION INSPECTION.

A. A certificated repair station may apply for additional facilities or locations to become satellites of the repair station with managerial control. If practical, the satellite repair station may use all or portions of the managerial repair station's manuals to develop its own manuals. Each satellite must satisfy all requirements of part 145 for each rating sought. Ratings for the satellite may not exceed the rating of the managerial repair station.

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1) Personnel and equipment from the repair station with managerial control and each certificated satellite repair station under its control may be shared.

NOTE: Procedures must be included in the manual to describe how tools will be recalibrated or removed from service if calibration is compromised during their transport between facilities.

2) Inspection personnel must be designated for each satellite repair station and be available at the repair station anytime a determination of airworthiness or return to service is made. In other circumstances, inspection personnel may be away from the premises but must be available by telephone, radio, or other electronic means.

3) The satellite repair station may not hold a rating that is not held by the certificated repair station with managerial control.

4) The satellite repair station must be located in the same domicile country as the certificated repair station with managerial control.

B. A satellite facility inspection is conducted in the same manner as a repair station facility inspection.

2-1320 REPAIR STATION INSPECTION.

NOTE: The following procedures apply to all repair stations regardless of their geographic location.

A. Each certificated repair station must provide the following:

1) Housing for the facilities, equipment, materials, and personnel consistent with its ratings.

2) Facilities for properly performing the maintenance, preventive maintenance, or alterations of articles, or the specialized services for which it is rated. Facilities must include the following:

a) Sufficient work space and areas for the proper segregation and protection of articles during all maintenance, preventive maintenance, or alterations;

b) Segregated work areas enabling environmentally hazardous or sensitive operations such as painting, cleaning, welding, avionics work, electronic work, and machining to be done properly and in a manner that does not adversely affect other maintenance or alteration articles or alterations;

c) Suitable racks, hoists, trays, stands, and other segregation means for the storage and protection of all articles undergoing maintenance, preventive maintenance, or alteration;

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d) Space sufficient to segregate articles and materials stocked for installation from those articles undergoing maintenance, preventive maintenance, or alteration; and

e) Ventilation, lighting, and control of temperature, humidity, and other climatic conditions sufficient to ensure personnel perform maintenance, preventive maintenance, or alterations to the standards required by this part.

B. A certificated repair station with an airframe rating must provide suitable permanent housing to enclose the largest type and model of aircraft listed on its operations specifications (OpSpecs).

NOTE: Each certificated repair station must have a fixed location where materials, equipment, tools, and data are stored. While consideration can be given for certain operating situations, aviation safety inspectors (ASI) must not authorize "virtual" or completely "mobile" repair stations. Even though the majority of the work is done away from the fixed location, each repair station must have a permanent, fixed base from which it operates the repair station.

1) ASIs should evaluate the housing needs of the repair station based upon the depth and complexity of the work the repair station will perform. For example, if an airframe-rated repair station will only be doing interior refurbishment or interior electrical work that does not require the aircraft to be completely housed, a nose dock or other similar housing may suffice for the housing requirement. Any work done on removed aircraft components must be accomplished in an appropriate housing, back shop, or other permanent structure.

2) Repair stations that frequently work away from their fixed location must ensure another certificate holder's housing and facilities are adequate and meet the requirements of the regulations for the ratings that they hold. Procedures should be included in their manuals that describe how they will evaluate a certificate holder's facilities prior to performing maintenance under the privileges of their certificate at the facility.

3) Some repair stations, such as internal fuel tank repair stations, do not require housing that will enclose the largest aircraft listed on their OpSpecs. Most of this type of work is performed in the aircraft wing, and protection from the elements should not be a major consideration. The use of mobile coverings to protect articles being installed or removed from the wing should provide sufficient protection from the elements.

C. A certificated repair station may perform those maintenance functions for which it is rated on articles outside of its housing if it provides suitable facilities that are acceptable to the FAA. The facility must meet the requirements of part 145, § 145.103(a), and the work must be done in accordance with the requirements of part 43 of this chapter.

D. A certificated repair station may perform maintenance, preventive maintenance, or alterations for the following certificated operators or carriers:

1) A 14 CFR part 121 or part 135 air carrier or commercial operator that has a Continuous Airworthiness Maintenance Program (CAMP) and the repair station must follow their program and applicable sections of their maintenance manual.

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2) A 14 CFR part 125 operators and the repair station must follow the operator's FAA-approved inspection program.

3) A foreign air carrier or foreign person operating a U.S.-registered aircraft and the repair station must follow the operator's FAA-approved maintenance/inspection program.

E. A certificated repair station may be authorized to perform line maintenance for an air carrier certificated under part 121 or 135, a foreign air carrier, or a foreign person operating a U.S.-registered aircraft in common carriage under 14 CFR part 129, provided:

1) The repair station performs such line maintenance in accordance with the operator's manual and approved maintenance program;

2) The repair station has the necessary equipment, trained personnel, and technical data to perform such line maintenance; and

3) The repair station OpSpecs includes an authorization to perform line maintenance.

NOTE: All certificated repair stations must have suitable permanent housing and facilities. Although § 145.205(d) allows some deviation from the housing requirement, that requirement is based upon the repair station having suitable housing at another location that meets the requirements of part 145. If line maintenance is the only maintenance a repair station is certificated to perform, the repair station must still meet the housing and all other applicable requirements of part 145. Housing need not be on the airport where the line maintenance is performed, but the street address must be listed on the repair station OpSpecs.

F. A repair station may have the need to perform maintenance away from its permanent fixed base of operation. This requirement may be necessary due to a special circumstance, as determined by the FAA, or may be recurring based on a repair station's need. Such work may include, but not be limited to:

- Aircraft recovery;
- Biennial testing of systems on aircraft operating under instrument flight rules (IFR);
- Fuel cell maintenance;
- Nondestructive Testing (NDT) inspections; and
- Interior modifications.

1) A repair station performing maintenance away from its fixed location may transport the materials, equipment, and technical personnel to the aircraft location or facility to facilitate the required maintenance.

2) At no time while performing work away from its fixed base will the work scope exceed the capabilities for which the repair station is rated.

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3) A repair station that performs maintenance functions away from its fixed location on a recurring basis must ensure the temporary facility it uses meets the requirements of § 145.103(a).

4) The repair station must ensure that its repair station manual includes the procedures for accomplishing maintenance, preventive maintenance, alterations, or specialized services at a place other than the repair station's fixed location.

G. A repair station may need to perform maintenance at multiple fixed locations (i.e., additional facilities/localized within a defined area).

1) A repair station does not require a geographic authorization or satellite certificate if it is seeking to work at another site within a localized area. A localized area may be defined as several buildings or hangars, which may be on or near an airport or at or near the primary fixed base address as stated on the repair station OpSpecs. Repair stations using multiple fixed locations under a single air agency certificate need not have all the tools, equipment, data, or personnel at each location. The repair station's primary fixed base and any additional fixed locations are considered a single repair station. Each facility address must be listed in the repair station OpSpecs. This situation is not considered work away from the station.

2) The repair station manual must incorporate procedures that reflect how the repair station will meet the requirements of part 145 at each of its facilities. The procedures must include any supplemental operations (i.e., movement of articles, equipment, or tools required to perform the work) that may affect the repair station's ability to ensure the airworthiness of the articles maintained by the repair station. The repair station remains directly in charge of the work performed at all fixed locations.

3) All fixed location addresses must be listed on the repair station's OpSpecs. The repair station must submit a written request/application to use additional locations prior to exercising the privileges of its certificate and ratings at the additional fixed locations. The FAA must inspect and approve each location and update the OpSpecs with the address for each additional location.

4) There also may be instances where an engine test cell facility is located away from the primary facility but operates under the same certificate as the primary facility. This may occur when:

a) The FAA determines that the separate locations do not have any significant impact on the maintenance performed, and the separate locations are under the full control of the primary facility; and

b) The separate facilities must be in a defined area relative to the primary facility, and located within the same country. An FAA inspector must be able to use ground transportation to get from one facility to another without major expense or inconvenience.

5) OpSpec A101 must contain the address of all of the repair station's additional fixed locations.

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2-1321 COORDINATION REQUIREMENTS. This task may require coordination with another specialty or district office, and the certificated repair station.

2-1322 REFERENCES, FORMS, AND JOB AIDS.

A. References:

- Title 14 CFR Parts 43, 65, 91, 121, 125, and 135.
- AC 145-9, Guide for Developing and Evaluating Repair Station and Quality Control Manuals.
- Volume 2, Chapter 11, Section 1, Safety Assurance System: Introduction.
- Volume 2, Chapter 11, Section 2, Procedures for Certificating Part 145 Repair Stations/Satellites Located Within the United States and Its Territories.
- Volume 2, Chapter 11, Section 3, International Field Office Procedures for Certificating/Renewing/Amending a Part 145 Repair Station Located Outside the United States and its Territories and not Under a Maintenance Implementation Procedure.
- Volume 2, Chapter 11, Section 4, Safety Assurance System: Evaluate a Part 145 Repair Station Manual and Quality Control Manual or Revision.
- Volume 6, Chapter 9, Section 8, Safety Assurance System: Inspect a Part 145 Repair Station's Housing and Facilities.
- Volume 6, Chapter 9, Section 9, Safety Assurance System: Inspect a Part 145 Repair Station's Tools and Equipment.
- Volume 6, Chapter 11, Section 20, Safety Assurance System: Evaluate Special Equipment or Test Apparatus.

B. Forms. FAA Form 8310-3, Application for Repair Station Certificate and/or Rating.

C. Job Aids. None.

2-1323 PROCEDURES.

A. Review Documentation. Review the Repair Station Certificate Manuals/Revision, Capabilities Listing, and OpSpecs for accuracy to determine that ratings are appropriate for work being performed, for accuracy. Also determine if maintenance functions will be contracted out, and contracted persons will meet the requirements of § 145.217.

B. Evaluate the Housing and Facilities. Inspect the following:

1) Housing and shop areas to ensure the following:

a) Adequate housing includes sufficient workspace for maintenance functions to be accomplished.

b) If a repair station holds an airframe class rating or limited airframe (specific model aircraft) rating, that housing includes suitable permanent housing for the largest type and model aircraft listed on its OpSpecs.

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NOTE: If climatic conditions allow, the repair station may perform maintenance, preventive maintenance, or alterations outside of its housing if these facilities are acceptable to the FAA and meet the requirements of § 145.103(a).

c) Proper storage and protection of:

- Materials,
- Parts, and
- Supplies.

d) Proper identification and protection of parts and subassemblies during:

- Disassembly,
- Cleaning,
- Inspection,
- Repair,
- Alteration, and
- Assembly.

e) Segregation of the following:

- Incompatible work areas (e.g., metal shop, battery charging area, or painting area next to an assembly area);
- Unpartitioned parts cleaning areas; and
- Articles and materials stocked for installation from those articles undergoing maintenance or alteration.

f) Proper ventilation, lighting, and temperature and humidity for the type and complexity of work being accomplished.

2) Technical documents to ensure that they are current and accessible when relevant work is being performed:

- Airworthiness Directives (AD),
- Instructions for continued airworthiness (ICA),
- Maintenance manuals,
- Overhaul manuals,
- Standard practice manuals,
- Service Bulletins (SB), and
- Other applicable data acceptable to or approved by the FAA.

3) Equipment, tools, and test equipment, to ensure:

a) Required types and quantities are available and under the control of the repair station during performance of the work function.

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b) All test and inspection equipment and tools used to make airworthiness determinations are calibrated to a standard acceptable to the FAA.

NOTE: The part 145 rule states that tooling is calibrated to a standard acceptable to the Administrator. That may be a standard derived from the National Institute of Standards and Technology (NIST), or a standard provided by the equipment manufacturer. International agreements may also be accepted as a means of compliance. A list of international agreements referred to as Memorandum of Understanding (MOU) or Mutual Recognition Agreement (MRA) may be accessed from the NIST Web site (http://www.nist.gov). Also, The National Voluntary Laboratory Accreditation Program (NVLAP) provides third-party accreditation to testing and calibration laboratories. NVLAP's accreditation programs are established in response to Congressional mandates, administrative actions by the Federal government, or requests by private-sector organizations. NVLAP is in full conformance with the standards of the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC), including ISO/IEC 17025 and Guide 58. NVLAP identifies its accredited laboratories in a published directory, NIST Special Publication 810, which is published on the NIST Web site. Additionally, for foreign equipment, the standard of the country of manufacture may be used if approved by the Administrator. An Exemption Authorization is required if a repair station uses equipment of a foreign manufacturer and the method of calibration it will use is not addressed through a MOU or MRA, or the FAA inspector cannot obtain the validity of the Calibration Laboratory. Exemption authorizations are granted through the issuance of an exemption per 14 CFR part 11 guidance. Currently, exemptions of this type are issued for a 2-year period and can be renewed if requested by the repair station.

c) A repair station may substitute manufacturers' tooling with one that is of its equivalent. If the repair station uses equivalent tooling it is responsible for the determination of equivalency. The repair station must provide a means to the FAA that will demonstrate that the tool meets the manufacturer's standards and specifications with all respects regarding tolerances and accuracy.

1. The special equipment or test apparatus must be capable of performing all normal tests and checking all parameters of the equipment (article) under test. The level of accuracy should be equal or better than that recommended by the manufacturer.

2. The equivalency can only be made based upon an evaluation of a technical data file. The repair station will establish a technical data file for each piece of equivalent tooling. The file will contain, but is not limited to, data, drawings, specifications, instructions, photographs, templates, certificates, and reports.

a. In the case of calibration equipment, the technical data file should also include data sheets attesting to the accuracy when calibration standards are necessary, as well as any special manufacturing processes that are used, including gauges and recording equipment in the controlling process.

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b. If calibration equipment is involved, adequacy of that calibration system shall be established with documented procedures to evaluate the adequacy of that calibration equipment and its traceability to one of the previously listed standards.

3. A demonstration of the functionality of the special equipment or test apparatus may be necessary to determine its equivalency.

NOTE: Designated Engineering Representatives (DER) may not approve or determine equivalency of tooling and test equipment. Furthermore, neither the FAA nor a DER may approve equipment and/or test apparatus. The FAA and DERs may only make an acceptance of functional equivalency for special equipment or test apparatus. It is important to emphasize that the burden of demonstrating equivalency is borne by the repair station and not the FAA.

C. Analyze Findings. If deficiencies were found, meet with the certificate holder to discuss possible corrective actions.

2-1324 TASK OUTCOMES.

A. Complete the PTRS Record.

B. Follow SAS Guidance Modules 4 and 5.

C. Complete the Task. Completion of this task will result in one of the following:

1) If the facilities were found acceptable:

- Insert an entry into the PTRS stating satisfactory completion or entries in the comment section; and
- Provide a letter to the repair station acknowledging the successful completion of the inspection (optional).

2) If the facilities were found unacceptable:

- The focus of the Flight Standards Service (AFS) workforce should be to collaborate with the parties involved on correctly identifying and fixing the root cause(s) of deviations or noncompliance;
- Provide a letter describing any deficiencies that must be corrected;
- See Volume 14, Chapter 1, Sections 1 and 2, to determine the most appropriate course of action to correct deviations from regulatory requirements; and
- Conduct a followup evaluation to ensure that the repair station is in compliance with regulations.

D. Document the Task. File all supporting paperwork in the certificated repair station's office file. Follow SAS guidance for Module 4.

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2-1325 FUTURE ACTIVITIES. Follow SAS guidance.

RESERVED. Paragraphs 2-1326 through 2-1340.

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VOLUME 2 AIR OPERATOR AND AIR AGENCY CERTIFICATION AND APPLICATION PROCESS

CHAPTER 11 CERTIFICATION OF A TITLE 14 CFR PART 145 REPAIR STATION

Section 6 Safety Assurance System: Part 145 Repair Station Located in the U.S. Applying for an EASA Part-145 Initial, Renewal, and Amendment Approval

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

A. Maintenance: 3377, 3669, and 3771.

B. Avionics: 5377, 5669, and 5771.

NOTE: All certification for part 145 repair station will be completed using the Safety Assurance System (SAS). This section is not currently addressed within any system, subsystem, or element within the SAS. The EASA supplement contains an element process within the SAS as addressed in subparagraph 2-1346G of this section.

2-1342 OBJECTIVE. This section guides aviation safety inspectors (ASI) on how to certificate a Title 14 of the Code of Federal Regulations (14 CFR) part 145 repair station, located in the United States, that is applying for a European Aviation Safety Agency (EASA) Part-145 approval. ASIs must use this section in conjunction with the Maintenance Annex Guidance (MAG). However, the MAG supersedes this section if conflicts exist between the two documents.

2-1343 BACKGROUND.

A. United States/European Union (EU) Aviation Safety Agreement.

1) The Agreement signed on June 30, 2008 is between the United States and the EU to cooperate in the regulation of civil aviation safety. The Agreement's official title is "Agreement Between the United States of America and the European Community on Cooperation in the Regulation of Civil Aviation Safety." The Agreement contains two annexes. Annex 1 pertains to airworthiness and environmental certification, while Annex 2 pertains to maintenance. This section focuses on Annex 2.

2) The Agreement allows the Federal Aviation Administration (FAA) and EASA to rely on each other's surveillance systems, minimize the duplication of efforts, increase efficiency, and conserve resources to the greatest extent possible. The Agreement calls for successful completion of regularly scheduled FAA inspections. The FAA and EASA must be satisfied that repair stations located in the United States and EU-based Approved Maintenance Organizations (AMO) meet the conditions of Annex 2.

3) Annex 2 of the Agreement allows EASA and the FAA to accept each other's standards, systems, and approvals relating to repair stations located in the United States and

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EU-based AMOs that maintain civil aviation products. Annex 2 also explains how to establish points of communication and cooperation when urgent or unusual situations develop.

B. MAG. The MAG is the general term for the document's official title, which is "Maintenance Annex Guidance Between the Federal Aviation Administration for the United States of America and the European Aviation Safety Agency for the European Union." The MAG, which is a separate document from the Agreement, explains how to implement the Agreement and its Annex 2.

NOTE: Both the MAG and the Agreement are located at: http://www.faa.gov/aircraft/repair.

2-1344 INITIAL/AMENDMENT—PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites:

- Knowledge of the regulatory requirements of 14 CFR parts 43 and 145;
- Knowledge of the MAG requirements;
- Successful completion of the Airworthiness Inspector Indoctrination course(s) or equivalent;
- Successful completion of FAA training course 21058, Certification and Surveillance of Part 145 Stations, or equivalent;
- Successful completion of Web-based training course 27100066, Understanding the U.S./EU Aviation Safety Agreement for maintenance; and
- Previous experience with certification or surveillance of part 145 repair stations.

B. Coordination. This task requires coordination with the following:

- Applicant repair station;
- Applicant repair station's ASI. This could include the principal maintenance inspector (PMI) or principal avionics inspector (PAI);
- EASA;
- FAA regional EASA coordinator; and
- FAA Regional Offices (RO) and district offices, as appropriate.

2-1345 INITIAL/AMENDMENT—REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions):

- Title 14 CFR Parts 43 and 145.
- Agreement Between the United States of America and the European Community on Cooperation in the Regulation of Civil Aviation Safety (the Agreement).
- Maintenance Annex Guidance Between the Federal Aviation Administration for the United States of America and the European Aviation Safety Agency for the European Union (the MAG).

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- Volume 2, Chapter 11, Section 1, Safety Assurance System: Introduction.
- Volume 2, Chapter 11, Section 2, Procedures for Certificating Part 145 Repair Stations/Satellites Located Within the United States and Its Territories.
- Volume 2, Chapter 11, Section 4, Safety Assurance System: Evaluate a Part 145 Repair Station Manual and Quality Control Manual or Revision.

B. Forms:

- FAA Form 8000-4, Air Agency Certificate.
- FAA Form 8000-4-1, Repair Station Operations Specifications.
- EASA Form 1, Authorised Release Certificate.
- EASA Form 3, Maintenance Organisation Approval Certificate.
- EASA Form 9, FAA Recommendation.
- EASA Form 16, Application Form.

NOTE: Access EASA Part-145 documents and forms at http://www.easa.europa.eu/document-library.

C. Job Aids. The MAG includes job aids as appendices.

2-1346 INITIAL/AMENDMENT CERTIFICATION, DOCUMENT REVIEW, AND PREPARATION.

A. Receipt of Preliminary Inquiry. Upon receiving a preliminary inquiry from a repair station applying for initial EASA Part-145 approval, the ASI should follow the process and procedures contained in this section and the MAG, section B. The ASI should also inform the FAA regional EASA coordinator of the initial contact.

B. Line Stations. EASA uses the term “line stations” while the FAA uses the term “line maintenance authorization” in relation to part 145. This is to advise the ASI that these terms are synonymous when applied under the terms of the Agreement. The EASA certificate shall only cover line stations under the surveillance of the FAA, except those located in one of the EU Member States.

C. Fees. The repair station will comply with EASA fees and charges regulation found at http://www.easa.europa.eu/document-library.

D. MAG Forms and Accessibility. The MAG contains EASA Form 9, EASA Form 16, and surveillance information to complete the task. The forms are also available on the EASA Web site. (See the EASA Web site address in paragraph 2-1343.)

E. Prerequisite for Applicants. A repair station seeking approval under EASA Part-145 must hold a valid repair station certificate issued under part 145 and be located in the United States and its territories. A repair station may not apply concurrently for a repair station certificate and EASA approval.

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F. Evidence of Need. The repair station must submit written confirmation of the need for an EASA Part-145 approval. This may be in the form of a Letter of Intent (LOI), a work order, or a contract with details of the relevant customer. A relevant customer may be an EASA Part-145 AMO, a European operator, or a distributor (refer to the MAG, section B, part I, paragraph 2.1).

G. EASA Supplement Requirements. Before inspecting the facility, the ASI must first review the submitted repair station's EASA supplement to ensure the supplement meets the requirements in the MAG, section B and the sample supplement (see Volume 12, Chapter 8, Section 1). The ASI accepts the supplement in the same manner as the FAA accepts the Repair Station Manual (RSM)/Quality Control Manual (QCM).

H. Reasons for Amendments. Per the MAG, section B, part III, an EASA certificate must be re-issued when a repair station changes the following:

- Name, including doing business as (DBA) names;
- Address of the approved facility (not including the mailing address); and
- Repair station number.

I. Unimpeded Access. For the purposes of surveillance and inspection, the FAA and EASA (and aviation authorities (AA)) will help each other gain unimpeded access to repair stations/AMOs subject to its jurisdiction. It is incumbent upon the repair station/AMO to provide unimpeded access to EASA and the FAA to all work areas having civil aviation application. The repair station/AMO should ensure that, where possible, there is clear delineation between work areas with civil and military applications within the repair station/AMO.

J. Exchange of Safety Data. Article 9 of the Agreement stipulates that the FAA and EASA will provide each other, on request and in a timely manner, with any information regarding accidents/incidents involving civilian aeronautical products or regulated entities, and to exchange other safety information. Per the Agreement, the FAA agrees to share Safety Performance Analysis System (SPAS) data with EASA that is restricted to:

- The repair station's profile (attached to EASA Form 9); and
- Information documented in PTRS related to repair station findings on EASA Form 9. (EASA Form 9 is used during certification, amendment, or renewal of a repair station located in the United States that is seeking or has received EASA approval.)

2-1347 INITIAL/AMENDMENT—DEMONSTRATION AND INSPECTION PHASE.

A. Review for Initial Approval.

1) The ASI will inspect the repair station for compliance with parts 43 and 145 and the EASA supplement. If an ASI has inspected the repair station within the past 6 months, he or she is not required to re-inspect it for compliance with parts 43 and 145.

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2) The ASI must review the repair station's compliance with those items specified on EASA Form 9, as applicable.

3) The ASI will also perform the following:

a) Confirm that the repair station's EASA supplement is available throughout the facility.

b) Verify that the repair station has established an effective internal quality audit system, has established a schedule to perform the audit, and has corrected any findings or discrepancies identified. An ASI accomplishes an initial inspection by reviewing the EASA manual supplement and ensuring the internal quality system meets the requirements of the MAG, section B.

c) If the repair station holds a D107 operations specification (OpSpec) for line maintenance authorization, verify, as applicable, that the EASA supplement lists each EASA location, including make, model of aircraft, and European customer. (The repair station's internal quality system/internal quality audit system includes line stations, as applicable.) ASIs accomplish this by reviewing records of the quality monitoring system/internal quality audit system (refer to the MAG, section B for requirements). However, ASIs should be aware that if the office is unable to provide proper surveillance of the line station's locations outside its geographic boundaries or unable to delegate the surveillance to another office, they should consult with the RO for additional options before rejecting the supplement or revision.

NOTE: Be advised that the FAA cannot include foreign-registered aircraft types on OpSpec D107. Under the Agreement, the EASA supplement will list these aircraft types.

4) When reviewing the findings of the repair station's internal quality system/internal quality audit findings, the ASI should regard the findings as a self-disclosure and should not process violations on these findings. The ASI should recommend to the repair station that it submit the identified findings per FAA voluntary disclosure procedures. EASA recognizes the FAA self-disclosure process when the repair station meets the guidance provided in the current edition of Advisory Circular (AC) 00-58, Voluntary Disclosure Reporting Program. Freedom of Information Act (FOIA) restrictions would not apply in the case of EASA receiving notification of the corrective action plan (CAP) because the findings may directly impact the repair station's certificate. The ASI should complete EASA Form 9 to identify the findings and attach the CAP.

B. Inspect Repair Stations Seeking Amendment. Depending on the nature of the proposed amendment, the FAA may need to perform a limited inspection of the repair station seeking an amendment.

C. Analyze and Document Any Deficiencies.

1) If deficiencies are noted, the ASI must brief an appropriate representative of the repair station at the end of the inspection, confirm any findings, notify the repair station in writing, and, if appropriate, meet with the repair station to review the deficiencies in detail.

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a) For an initial application, the repair station must correct all deficiencies noted by the ASI, per the MAG, section B, part I, paragraph 3.9.

b) If the repair station has a noncompliance concerning parts 43 and 145, the ASI will advise EASA of the issues and the associated FAA action with EASA Form 9, but the ASI cannot withhold a positive recommendation. The final decision for EASA approval lies with the EASA.

2) The repair station must notify the ASI when it has corrected all deficiencies. The ASI must document and record each deficiency and corrective action in the repair station's certification file. The ASI must notify the FAA regional EASA coordinator of:

- All deficiencies that the repair station has not corrected;
- Any problems that may deny initial EASA approval;
- Any issues that require consultation with the EASA; or
- Any other actions the repair station must coordinate with the EASA.

NOTE: ASIs should coordinate all nonrecommendations for EASA approval (initial/renewal/amendment) with the FAA regional EASA coordinator, who should act as the point of contact (POC) between the FAA and EASA.

2-1348 INITIAL/AMENDMENT—EASA APPROVAL. To recommend EASA Part-145 approval of a repair station, the ASI should be satisfied with the proposed EASA supplement, any amendments (if applicable), evidence of need, the EASA Form 16 application (in accordance with the MAG, section B), and any inspections the FAA has performed. The ASI will recommend acceptance of the repair station to the EASA by preparing EASA Form 9. Refer to the MAG, section B, appendix 3 for details and completion instructions.

A. Prepare EASA Form 9.

1) On EASA Form 9, ASIs must check each block "Yes," "No," or "N/A," as applicable.

NOTE: The principal inspector (PI) should check "Yes" in the last block of the EASA supplement status indicating the FAA has accepted the EASA supplement.

2) For an initial certification and only after the repair station corrects all its findings/discrepancies, the ASI must forward to EASA the following:

- EASA Form 9. (For initial certification, complete Form 9 for the main facility, and for each additional fixed location, and line station under this approval. For renewal and amendment, complete only one Form 9 that includes line items 1 and 2 as seen in the MAG, section B, appendix 3.);
- A copy of the repair station profile from SPAS (attached to EASA Form 9); and
- Any accompanying material.

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3) ASIs must not use a pending compliance and/or enforcement action to delay submitting EASA Form 9 with a nonrecommendation.

B. Process the Recommendation for EASA Part-145 Approval. Follow the process and procedures contained in the MAG, section B, part I, paragraph 3.10.

NOTE: The ASI may email the certification package to the EASA at foreign145@easa.europa.eu.

C. Receive a Copy of EASA Part-145 Approval. EASA will follow the process and procedures contained in the MAG, section B, part I, paragraph 4. The FAA regional EASA coordinator will forward a copy to the appropriate ASI for the office records.

2-1349 INITIAL/AMENDMENT—TASK OUTCOMES.

A. Complete the PTRS Record. The ASI will complete the PTRS record as needed.

B. Complete the Task. Completion of the task will result in the following action.

1) Once EASA issues the EASA Part-145 certificate to the repair station, the ASI will:

a) Revise OpSpec A001 of a new repair station's OpSpecs to include the following (or equivalent) language: "The repair station specified on these OpSpecs is performing maintenance and/or alteration of aircraft and/or aeronautical products to be installed on aircraft under the terms and conditions of the U.S./EU Safety Agreement and associated Annex 2."

b) Update the enhanced Vital Information Database (eVID) by completing all relevant data fields to indicate that the repair station is EASA-approved.

c) Return one copy of the EASA supplement to the repair station.

d) File a copy of the EASA supplement, a copy of the evidence of need document, EASA Form 16, and EASA Form 9 in the repair station's file.

2) For a repair station that terminated the process or failed an inspection, the ASI will return to the repair station all copies of the EASA supplement and EASA Form 16 with a letter explaining all deficiencies.

C. Document the Task. File all supporting paperwork in the repair station's file and add EASA supplement aspects to all future FAA inspections of the repair station's facility. A copy of the applicant's EASA supplement, together with its part 145 RSM/QCM, will be maintained at the Flight Standards District Office (FSDO).

NOTE: The EASA does not require a copy of either the repair station's manual or EASA supplement.

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2-1350 INITIAL/AMENDMENT—FUTURE ACTIVITIES. When the EASA Part-145 approval process is complete, the ASI must revise surveillance planning and scheduling for the repair station to include surveillance and inspections for compliance with part 145 and EASA special conditions. The ASI should coordinate FAA facility inspections to accomplish EASA renewal facility inspections.

2-1351 SIGNIFICANT FINDINGS AND ENFORCEMENT ACTION.

A. Reporting Findings on EASA Form 9. The ASI will use EASA Form 9 to report any changes to the status of the repair station part 145 certificate (such as surrender, suspension, or revocation) and any serious failure of the repair station to comply with part 145 that could result in certificate action. To report uncorrected findings or discrepancies, the ASI will leave the "date closed" column blank. Revocation of a repair station's part 145 certificate automatically invalidates its EASA approval.

1) For recommendations, refer to the MAG, section B, part II, paragraph 5.3.

2) For nonrecommendations, refer to the MAG, section B, part II, paragraph 5.4.

NOTE: Withdrawal of FAA certification will result in the withdrawal of EASA approval since EASA certification is based on compliance with part 145 and EASA special conditions. The Agreement obligates the FAA to inform the EASA of findings, which allows the EASA to determine what action to take.

B. Compliance and Enforcement Actions. ASIs are still responsible for processing the most appropriate action in accordance with Volume 14, Chapter 1, Sections 1 and 2, to correct deviations from part 145 regulatory requirements, even if they notify the EASA of a part 145 noncompliance. An ASI, however, cannot process compliance or enforcement action if the basis for the action is a deviation from EASA special conditions, but not a noncompliance of part 145.

2-1352 RENEWAL APPROVAL—PREREQUISITES AND COORDINATION REQUIREMENTS. See paragraph 2-1344.

2-1353 RENEWAL APPROVAL—REFERENCES, FORMS, AND JOB AIDS. See paragraph 2-1345.

2-1354 RENEWAL APPROVAL—EASA PART-145 RENEWAL APPROVAL PROCESS. The MAG, section B, part II contains the procedures for the EASA Part-145 renewal.

2-1355 RENEWAL APPROVAL—DOCUMENT COMPLIANCE PHASE.

A. Review Completed EASA Form 16. The ASI should verify that the repair station has submitted a completed EASA Form 16. Guidance for evaluating an EASA supplement is in the MAG, section B, appendix 1. The evidence of need may be an LOI, contract, or work order from an EASA AMO, European operator, or a distributor.

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NOTE: The repair station must submit to the ASI for review and acceptance any revisions to its EASA supplement that reflect changed procedures but do not change the nature of its EASA Part-145 approval. Once the repair station has submitted the revision to the FAA, it may implement the revision unless notified otherwise by the FAA. Submission of EASA Form 16 is not required for such revisions.

B. FSDO Copy of EASA Form 3 Approval Certificate. ASIs should ensure that the repair station provides them a copy of the EASA Form 3 approval certificate once the repair station receives it from EASA.

2-1356 RENEWAL APPROVAL—DEMONSTRATION AND INSPECTION PHASE.

A. Review/Inspect the Repair Station for EASA Renewal Approval. Refer to the MAG, section B, part II for the process and procedures for EASA renewal approval. In addition, the ASI should complete the following tasks:

1) Inspect the repair station for compliance with parts 43 and 145 and the EASA supplement. ASIs may accomplish this when they complete their normal annual work program.

2) Review the repair station's compliance with those items specified on EASA Form 9.

3) Confirm that the repair station EASA supplement is available throughout the facility.

4) Confirm whether the repair station has performed any work for an EASA customer since the last inspection. If the repair station has performed or is currently performing work for an EASA customer, the ASI will verify the following:

a) Relevant maintenance records are clear and complete.

b) Hangar space is available for base maintenance. A repair station may perform line maintenance, per the MAG, section B.

c) The repair station has an independent quality monitoring system.

d) If the repair station holds a D107 OpSpec for line maintenance authorization, verify, as applicable, that the EASA supplement lists each EASA location, including make and model of aircraft and European customer. (Line stations, as applicable, are included in the repair station's independent quality monitoring system.) The ASI should review audit records to verify that the repair station has performed audits of its EASA-accepted line stations as identified in the EASA supplement.

e) Submit to the EASA, on EASA Form 9, any findings documented under an ASI's review of the repair station's independent quality monitoring system or findings under the repair station's self-disclosure process (refer to AC 00-58).

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B. Analyze and Document Any Deficiencies.

1) If the ASI notes deficiencies, he or she will brief an appropriate representative of the repair station at the end of the inspection and confirm any findings in writing within 2 weeks.

2) The ASI may require the repair station to submit a CAP, depending on the nature of the deficiencies. If the plan is satisfactory, the ASI will submit the CAP along with the completed EASA Form 9 recommending the repair station for EASA approval. If the repair station fails to correct the deficiencies or to provide a CAP prior to the expiration of its EASA approval, the ASI will end the repair station renewal approval process and submit EASA Form 9 to EASA with a nonrecommendation for renewal approval.

3) In the event of unusual circumstances (e.g., a short period of time between the inspection and the expiration date), the ASI should contact the regional EASA coordinator if an extension of approval is necessary. The regional EASA coordinator will advise the EASA of the circumstances and obtain EASA concurrence with the FAA recommendation to extend the renewal date. The EASA may extend the duration of the repair station EASA approval for a reasonable period of time.

NOTE: ASIs should coordinate all nonrecommendations for EASA approval (initial/renewal/amendment) with the FAA regional EASA coordinator, who should act as the POC between the FAA and EASA.

2-1357 RENEWAL APPROVAL—EASA APPROVAL.

A. Prepare EASA Form 9. To recommend EASA Part-145 renewal approval, the ASI, by completing EASA Form 9, verifies that the repair station complies with the appropriate sections of the MAG, section B.

1) For a repair station seeking EASA Part-145 renewal approval, the ASI must ensure that the repair station underwent two complete inspections during the preceding 2-year period to determine compliance with part 145 and EASA special conditions. The ASI should identify the dates of the previous year's surveillance on EASA Form 9 (part 1) and the date of the current year's surveillance in the recommendation or nonrecommendation block.

NOTE: If any repair station elects not to pursue an EASA renewal approval, the ASI will complete the nonrecommendation block by writing "Nonrenewal" and will forward EASA Forms 3 and 9 to EASA.

2) EASA Form 9 must have the applicable blocks marked "Yes," "No," or "N/A." If the ASI has marked a block "No," he or she must identify the finding and/or corrective action in the findings/discrepancies block. If the ASI checks "Yes" in part 2, this indicates the FAA has accepted the EASA supplement.

3) If the repair station has a noncompliance concerning parts 43 and 145, the ASI will advise the EASA of the compliance and/or enforcement action using EASA Form 9. The ASI cannot withhold a positive recommendation. The final decision for EASA approval lies with the EASA.

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B. Follow EASA Policy for EASA Form 9 Reporting Requirements.

1) The ASI will report on EASA Form 9 any change to the status of the repair station part 145 certificate, such as surrender, suspension, revocation, any change in ratings, change of address, etc. For findings that the repair station has not corrected, the ASI will leave the "date corrected" column blank and attach to EASA Form 9 any plans for corrective action.

2) If the EASA does not issue a renewal approval for any reason other than an enforcement action, such as nonpayment of fees, the EASA will inform the repair station and the ASI if the approval will remain valid until the EASA determines the validity of the issue.

C. Recommendation Package. The recommendation package will consist of the following:

- EASA Form 9. (For initial certification, complete Form 9 for the main facility, and for each additional fixed location, and line station under this approval. For renewal and amendment, complete only one Form 9 that includes line items 1 and 2 as seen in the MAG, section B, appendix 3.);
- EASA Form 16;
- A copy of the repair station profile from SPAS (attached to EASA Form 9);
- A copy of the repair station's FAA certificate and OpSpecs; and
- Any line station appendix from the EASA supplement, if appropriate.

D. Process the Recommendation for EASA Part-145 Approval. The ASI will submit the recommendation package to the EASA at least 30 days before the renewal due date. The ASI will submit the package using one of the methods below:

- Mail: European Aviation Safety Agency (EASA), Programmes Department, Applications and Certifications Manager, Postfach 10 12 53, D-50452 Köln, Germany;
- Fax: 011 49 221 89990 9505; or
- Email: foreign145@easa.europa.eu.

E. Receive a Copy of EASA Part-145 Renewal Approval. The EASA will process the renewal package in accordance with the MAG, section B, part II, paragraph 4. The FAA regional EASA coordinator will forward a copy of the EASA paperwork to the appropriate ASI. The EASA will include the repair station in the list of approved EASA Part-145 organizations, which is available on its Web site at http://easa.europa.eu/easa-and-you/aircraft-products/continuing-airworthiness-organisations/foreign-part-145-organisations-in-us.

F. Appeal of Revocation of EASA Part-145 Approval. Any repair station contesting the revocation of its EASA Part-145 approval may appeal to the EASA within 21 days subject to evidence being submitted at the time of the appeal. The repair station cannot appeal to the FAA when the EASA revokes or limits a repair station's EASA Part-145 approval. Repair stations should address any appeal to the EASA to the attention of the Executive Director of the EASA to initiate a conflict resolution process. The repair station's EASA approval will remain in

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temporary suspension awaiting the outcome of any appeal. Should a special audit be necessary, the repair station will incur a separate fee for the cost of this audit.

2-1358 RENEWAL APPROVAL—TASK OUTCOMES.

A. Complete the PTRS Record. The ASI will complete the PTRS record as needed.

B. Complete the Task. Completion of the task will result in the following:

1) For a successful application, the ASI will:

a) File EASA Form 3, issued by the EASA, in the appropriate repair station file.

b) Update all relevant data fields of the eVID to indicate that the repair station is EASA-approved.

NOTE: When updating the eVID Block 2, the ASI will calculate the next renewal approval due date using 2-year intervals from the initial approval date. This date should coincide with the EASA approval date.

c) File a copy of EASA Forms 9 and 16, a copy of the evidence of need, and supporting information in the repair station's file.

2) For an unsuccessful renewal, the ASI will:

a) Notify the FAA regional EASA coordinator if there is a situation that caused the nonrecommendation for renewal approval.

b) Retain a copy of EASA Forms 9 and 16, a copy of the evidence of need, and supporting information in the repair station's file.

2-1359 RENEWAL APPROVAL—FUTURE ACTIVITIES. In regards to EASA Sampling Inspection System (SIS) team visits, the ASI will follow the MAG, section A, part II and Volume 12, Chapter 6, Section 1.

RESERVED. Paragraphs 2-1360 through 2-1380.

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VOLUME 3 GENERAL TECHNICAL ADMINISTRATION

CHAPTER 22 AIRCRAFT DISPATCHER TRAINING AND QUALIFICATION PROGRAMS

Section 3 Safety Assurance System: Aircraft Dispatcher Basic Indoctrination Curriculum Segments

3-1656 GENERAL. This section contains direction and guidance to be used by principal operations inspectors (POI) when evaluating the content of aircraft dispatcher basic indoctrination curriculum segments. Title 14 of the Code of Federal Regulations (14 CFR) part 121, § 121.415(a)(1) requires that all new-hire aircraft dispatchers complete basic indoctrination ground training in the initial new-hire category of training. This section is related to SAS Element 3.1.1, (OP) Training and Qualification of Dispatchers and Flight Followers.

A. Purpose of Basic Indoctrination Training. The basic indoctrination curriculum segment is unique to the initial new-hire category of training. An aircraft dispatcher basic indoctrination curriculum segment serves the following purposes: as an introduction for the new-hire employee to the operator, as the manner in which the operator complies with the requirements of part 121, and as the basis for subsequent aircraft dispatcher training. The aircraft dispatcher basic indoctrination curriculum segment consists of that information required as background for new-hire aircraft dispatchers for the ground training curriculum segment.

B. Regulatory Requirements. Section 121.415(a)(1) requires that all new-hire aircraft dispatchers complete a minimum of 40 hours of basic indoctrination training. No reduction of hours in basic indoctrination training should be permitted unless coordinated with a Federal Aviation Administration (FAA) dispatch specialist. Section 121.415(a)(1) requires that training in the following subjects be included in the aircraft dispatcher basic indoctrination curriculum segment:

- Aircraft dispatcher duties and responsibilities;
- Appropriate provisions of 14 CFR;
- Contents of the operator’s operating certificate and operations specifications (OpSpecs); and
- Appropriate portions of the operator’s manual.

C. Optional Training Subjects. Operators may include and take credit for training given on other subjects in the aircraft dispatcher basic indoctrination curriculum segment. These subjects may be in addition to the subject areas required by 14 CFR and are in addition to the minimum 40 hours required by § 121.415(a)(1). This training consists of the information that new-hire aircraft dispatchers need as a foundation for the specific and detailed training to be conducted in the ground training curriculum segment. Among the appropriate subjects for this type of training are the following:

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- Overview of Company: Type and scope of operations conducted.
- Company Structure: Management organization, route structure, fleet composition (size and type), and facility locations.
- Administrative Orientation: Required documentation, scheduling, and inner-company communications.

3-1657 AIRCRAFT DISPATCHER BASIC INDOCTRINATION TRAINING. Aircraft dispatcher basic indoctrination training curriculum segments must consist of at least the operator-specific training modules dealing with the requirements of §§ 121.415(a)(1) and 121.535, and other related topics. These operator-specific training modules include the following:

A. Duties and Responsibilities Module. This module contains the duties the new-hire aircraft dispatcher will be assigned after becoming qualified. For example, a small operator may assign the aircraft dispatcher responsibilities for constructing flight plans, load planning, and performing Weight and Balance (W&B) calculations. The industry trend, however, is to assign these functions to specialized groups of employees. Section 121.533 requires that the aircraft dispatcher ensure that such functions have been adequately accomplished before releasing a flight, whether the functions have been accomplished by the aircraft dispatcher or by another employee. The new-hire aircraft dispatcher must be trained specifically as to how and by whom these tasks are to be accomplished in the operator's operation. Since the qualified dispatcher will be required to evaluate the adequacy of flight and load planning, the operator must ensure that the new-hire dispatcher has a thorough knowledge of the basic principles of these subjects.

B. Appropriate Provisions of the 14 CFR Module. This module contains policies and procedures that ensure that the aircraft dispatcher and the operator are in compliance with 14 CFR during flight operations. Operators should cite specific regulations (appropriate provisions of 14 CFR) during this module and show how the operator's procedures are designed to comply with 14 CFR as follows:

1) Inspectors must ensure that at least the following provisions of part 121 are covered:

- Subpart I—Airplane Performance Operating Limitations;
- Subpart P—Aircraft Dispatcher Qualifications and Duty Time Limitations;
- Subpart Q—Flight Time Limitations and Rest Requirements: Domestic Operations;
- Subpart R—Flight Time Limitations: Flag Operations;
- Subpart T—Flight Operations;
- Subpart U—Dispatching and Flight Release Rules; and
- Subpart V—Records and Reports.

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2) Inspectors should also ensure that the following 14 CFR and Title 49 of the Code of Federal Regulations (49 CFR) provisions are covered:

- Title 14 CFR parts 91 and 65 subpart C.
- Title 49 CFR parts 830, Notification and Reporting of Aircraft Accidents or Incidents and Overdue Aircraft, and Preservation of Aircraft Wreckage, Mail, Cargo, and Records (National Transportation Safety Board (NTSB)); 1542, Airport Security (Transportation Security Administration (TSA)); and 1544, Aircraft Operator Security: Air Carriers and Commercial Operators (TSA).

C. Contents of the Operator's Operating Certificate and Operations Specifications Module. This module contains training in the specific operations the operator may conduct, such as operations which are prohibited, required weather minimums, and limitations. The new-hire aircraft dispatcher must be thoroughly familiar with this information before assuming dispatcher duties.

D. Appropriate Portions of the Operator's Manual Module. This module contains training on the organization and content of the relevant sections of the operator's manuals. Usually, the training on the contents of the operator's manuals is covered simultaneously with the training on the operator's policies and procedures. Inspectors must ensure, however, that in this process the contents of the manuals are thoroughly covered. Operators must also provide aircraft dispatchers with information on the organization of the manuals and training on how to use the reference system of the manuals. Appropriate topics for this type of training are the following:

- Overview of manual sections and correlation of manual sections to the aircraft dispatcher training program;
- Use of reference, revision, and distribution systems for manuals;
- Access to manual when performing assigned duties; and
- Maintaining manual currency.

3-1658 AIRCRAFT DISPATCHER BASIC INDOCTRINATION TRAINING MODULES. An aircraft dispatcher basic indoctrination curriculum segment must include as many training modules as necessary to ensure adequate training. Each training module must include a module outline containing, at least, a descriptive title of the training module and a list of the related elements or events to be presented during instruction on the module.

A. Training Module Outline. The training module outline must contain only those elements and events required to ensure that aircraft dispatcher students will receive adequate training. Operators are not required to include detailed descriptions of each element or event for initial approval, as detailed descriptions are more appropriate for courseware. During the final approval process, the inspector who evaluates the training must review the courseware to ensure that the scope and depth of the training modules are adequate.

B. Construction of Modules. Operators have a certain amount of flexibility in the construction of aircraft dispatcher basic indoctrination training modules.

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1) A training module for students with significant experience in part 121 operations may be less comprehensive than a training module for students without that experience. This is usually the case with operators who hire only highly qualified personnel with extensive experience in part 121 operations.

2) The training modules required by § 121.415(a) must be included in the basic indoctrination curriculum segment outline and counted toward the hours requirement for this segment. The actual sequence of the training can be determined by the operator. For example, while the training module containing pilot-in-command (PIC) weather briefing requirements must be included in the aircraft dispatcher basic indoctrination curriculum segment outline, the operator may actually conduct the training for this module after having completed the meteorology training module of the initial ground training segment.

3) An operator may choose to put a training module in more than one curriculum segment. For approval purposes, however, the training module must be shown in the curriculum segment designated by 14 CFR. For example, in order to comply with § 121.415, the content of the operator's OpSpecs must be covered in the basic indoctrination curriculum segment. This does not, however, prohibit the operator from covering applicable provisions of the OpSpecs in other curriculum segments, such as ground training.

C. Training Module Outline Sample. The following is an example of one of the many acceptable methods of presenting an aircraft dispatcher basic indoctrination training module outline.

Table 3-81. Training Module Outline—Sample

AIRCRAFT DISPATCH DUTIES AND RESPONSIBILITIES	
Communication and Coordination	Elements Within a Training Module
Flight-Following Duties	
Special Flight Situations	

D. Training Module and Curriculum Segment Interrelationship. The following example illustrates the interrelationship between training modules in the aircraft dispatcher basic indoctrination curriculum segment.

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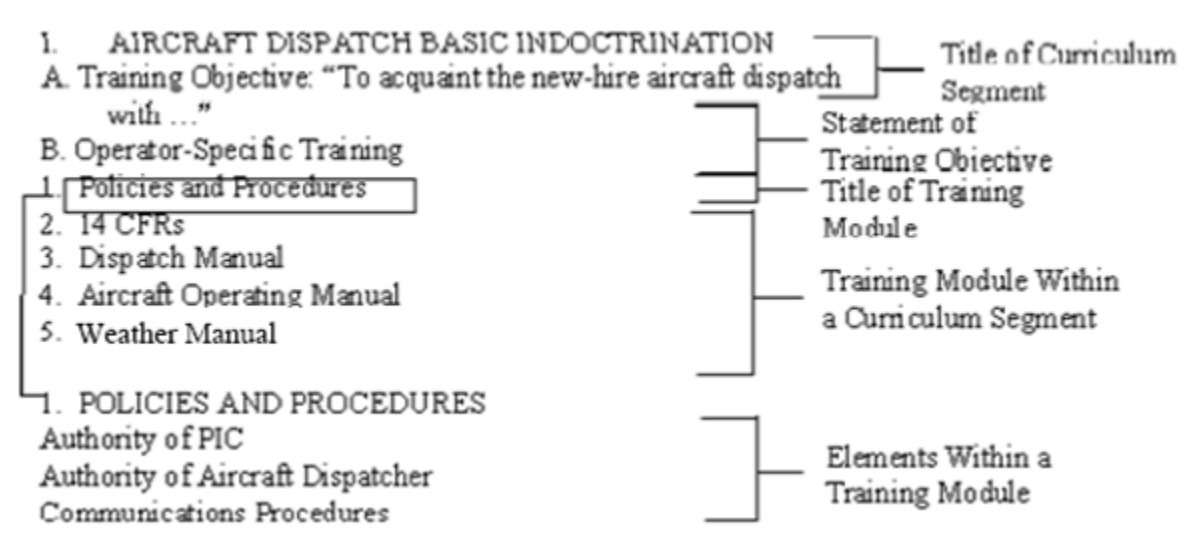
Table 3-82. Training Module and Curriculum Segment Interrelationship—Sample



3-1659 CURRICULUM SEGMENT COMPLETION REQUIREMENTS. An instructor or supervisor must certify in the training records that an aircraft dispatcher student has completed a curriculum segment. This certification is usually based on the satisfactory results of a written or oral examination. The examination may be administered at the end of each segment or at the end of the course. With some training methods, such as computer-based instruction (CBI), the certification may be based on student progress checks administered during the training course.

3-1660 EVALUATION OF TRAINING HOURS. Section 121.415 specifies a minimum of 40 programmed hours of instruction for aircraft dispatcher basic indoctrination training. Operators who employ personnel with little or no previous part 121 experience should program 40 training hours for basic indoctrination. POIs must consider the complexity of both the operation and the aircraft itself when evaluating aircraft dispatcher basic indoctrination curriculum segment outlines. Training hours for complex operations may exceed the 40-hour regulatory minimum.

A. Hazardous Material (Hazmat) Training. Hazmat training may not be included in the 40 hours required in the basic indoctrination curriculum. The hazmat training program is regulated by part 121 subpart Z and appendix O, and the operator's approved program identified in OpSpec A055. Typically, the extent of hazmat training for dispatchers depends upon the operator. A dispatcher that is responsible for accepting and/or handling hazmat must receive more intensive training than one required to be familiar with hazmat as it pertains to 49 CFR part 830. If an operator chooses to include hazmat training in its basic indoctrination curriculum, the hours allotted to that training must be in addition to the required minimum 40 hours. The 40 hours required in the initial ground training curriculum in § 121.422 also may not include hazmat training.

B. Security Training. Security training may not be included in the 40 hours required in the basic indoctrination curriculum. Security training is a Department of Homeland Security (DHS) requirement regulated by 49 CFR part 1544. If an operator chooses to include security

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training in its basic indoctrination curriculum, the hours allotted to that training must be in addition to the required minimum 40 hours. The 40 hours required in the initial ground training curriculum in § 121.422 also may not include security training.

3-1661 CREDITING DISTANCE LEARNING (DL) AS A COMPONENT OF TRAINING FOR AIRCRAFT DISPATCHERS.

A. Background. In the so-called "Information Age," many new information-sharing systems have been developed. Those systems have been centered largely on digital technology involving desktop computers and the Internet. Those systems include modern training products, many of which are being used effectively today in aviation courses conducted by accredited universities and in air carrier training programs approved by the FAA. Collectively, those products fall under a relatively new heading that has been called Distance Learning (DL). As the quality of those products continues to improve, the training/learning process stands to benefit even more. Previous FAA guidance seemed to presume that traditional classroom training was inherently superior to other training. That presumption was reflected in this order and elsewhere. Besides the proven effectiveness of modern training products, DL affords a low-cost alternative to classroom training, an alternative that is timely and appropriate in today's challenging economic environment. The updated guidance that follows should promote wider implementation of modern training methods apart from the traditional classroom.

B. Applicability. This paragraph applies to aircraft dispatcher training programs subject to FAA approval under part 121. Creditability of hours spent in DL activities applies to the programmed hours of training specified in part 121 regulations.

NOTE: Training programs that integrate DL and were approved under the guidance provided in Handbook Bulletin for Air Transportation (HBAT) 98-09 continue to be acceptable. However, major revisions of current training programs or approval of new training programs should follow the guidance in this document.

C. DL Definition. DL is a term currently not used in FAA regulations. It is a term used in the FAA and in the aviation industry with various meanings depending on context. For the purposes of this section, DL means learning that is accomplished by any training method not including an instructor and a gathering of trainees collocated in a traditional classroom. DL is known by other terms, such as e-learning, home study, self-guided training, virtual classroom, distributed training, computer-based training (CBT), Web-based training (WBT), and others.

D. Interim Guidance. Experts continue to develop a systematic approach for using the many effective training methods and products now available. It is unlikely that the last word will be written in the foreseeable future, if ever, since there is apparently no end to the prospects. The guidance contained in this paragraph applies until superseded, and should be used to help implement and standardize DL among air carriers.

E. Training Objectives and Proficiency. A training objective is a desired performance or behavior demonstrated under certain conditions with respect to specific standards. One way to

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identify training objectives and to verify that they have been met (also known as validation), is by a three-tier scheme comprising knowledge, skill, and performance.

1) Knowledge. Specific information required to enable a student to develop the skills and attitudes to effectively recall facts, identify concepts, apply rules or principles, solve problems, and think creatively. Because knowledge is covert, students must be assigned overt activities to demonstrate their knowledge base. May be validated through written, electronic, or oral testing. Examples include learning facts by rote, such as an operator's history, organization, and general policies; committing an Aircraft Flight Manual's (AFM) limitations to memory; or getting a basic understanding of an airplane's systems.

2) Skill. An ability enabled by knowledge to perform an activity or action. Skills are often grouped into cognitive skill and psychomotor skill categories.

a) Cognitive Skill. Ability to perform a task requiring the manipulation of words, numbers, and symbols. Requires the application of knowledge. Usually involves classification, the application of (mental) rules, procedures or principles, the solution of problems, or the application of creative thinking.

1. May be validated through written, electronic, or oral testing or through task performance.

2. Examples: Challenging a dispatch trainee to apply knowledge of an airplane's limitations to a W&B computation; or to apply basic systems knowledge to operating aircraft systems, and populating data in the flight planning system.

b) Psychomotor Skill. Ability to perform a task requiring dexterity, coordination, and muscular activity. Requires the application of knowledge. Usually involves the manipulation of objects or materials and the use of fine and gross muscular movement in a coordinated manner.

1. May be validated through performance of a task.

2. Example: Proper and efficient utilization of performance and flight planning tools to achieve the desired results.

3) Performance. Ability to accomplish useful work by combining knowledge, skill, and intangibles (sometimes called "soft skills") such as inference and judgment. Practice and application develop abilities for demonstration.

a) May be validated through performance of related tasks, sometimes called event sets.

b) Example: Demonstrating competence as a dispatcher in any operational situation or simulation involving flight planning, dispatch release, or flight following.

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F. Scope of Creditability of DL. DL credit is appropriate for knowledge objectives and for cognitive skill objectives. Creditability of DL is more complicated in regard to psychomotor skills and performance, and is not addressed in this section.

G. Limits on Creditability of DL.

1) The FAA recognizes the great training potential of DL that is well planned and effectively validated. That potential is already being exploited under the Advanced Qualification Program (AQP). Training developed in accordance with an implementation plan (described in subparagraph 3-1661I) is subject to FAA approval. In the past, credit for DL for flight dispatch training was limited to recurrent and requalification training and there were limits to the number of program hours that could be initially credited. Initially, DL may now be as much as 50 percent creditable toward the knowledge and cognitive skill training objectives in all ground training, including the following training categories:

- Basic indoctrination;
- Initial and transition ground training;
- Recurrent; and
- Requalification.

2) Applicants for DL must be able to show, for those categories chosen, that DL methods are at least as effective as instructor-led, traditional classroom training, relative to knowledge and cognitive skill training objectives. Dispatch applications, supervised operating experience, area qualification, and practice would be excluded from DL. Dispatch resource management (DRM) is considered a dispatch application. Due to the critical nature and safety implications of these categories, they are initially excluded from DL. Consideration for some DL in these categories is possible, based on the quality of that DL.

H. Training Media. The general nature and specific characteristics of training media used for DL vary widely. Examples include paper media, videotape, CBT, CDs, WBT, and virtual classroom. The media used should meet the requirements of the respective training objective. Validation of training effectiveness is one of the most important components of the implementation plan described below.

I. Implementation Plan. Any proposal for ground training to be accomplished by DL should include a plan for start-up, validation, operation, and maintenance of that training. This plan should include at least the following elements:

1) Startup. Identification of knowledge and cognitive skill areas, and specific training objectives.

a) Training objectives can be reduced to simple terms, such as being able to:

- Recall,
- Recognize,
- Comprehend, and
- Apply.

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1. Identification of the media to be used for training and testing.

2. A validation strategy that addresses (1) the effectiveness of the training itself, and (2) the learning accomplished by each person trained. Key features of a validation strategy are shown below.

b) Effectiveness of the ground training being conducted:

1. Setting a reference. One validation method is to establish a performance baseline from which to measure the effectiveness of the training proposed. Baselines exist in most ongoing air carrier training programs. Examples of performance baselines include: average training hours a trainee spends in learning a certain subject, average pass–fail rates for tests of training content, median scores, average pass–fail rates for proficiency checks, and many others. A performance baseline may be set by using an existing baseline or by referring to some other existing standard.

2. Maintaining currency. Validation depends upon maintaining the currency of the training to be conducted. A reliable method to do so is an essential part of a training proposal.

3. Tracking. A method for keeping test results and tracking overall performance.

c) Learning accomplished by each person trained:

1. A strategy for testing. Testing should be designed to determine that training objectives are being met by each trainee.

2. Integrity of tests. A method should be developed to ensure integrity of tests, including integrity of test questions and test answers, and controlled access to tests and test results.

3. Tracking. A method for keeping test results and tracking each individual's performance.

2) Validation. Validation of training is a determination that the training proposed actually succeeds in meeting the performance objectives for that training. Two essential assessments comprise validation of training.

a) Knowledge Validation. Assessment of a student's technical knowledge, accomplished by written or oral test.

b) Cognitive Skill Validation. Assessment of an individual's practical application of knowledge, which may be accomplished by written or oral test, or by a more subjective evaluation by a flight dispatch instructor.

3) Passing Grade—80 Percent. The dispatcher should satisfactorily accomplish the knowledge test (oral, written, or computer-based), with a minimum passing score of 80 percent.

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Any incorrect test answers should be addressed at the time of the test, and should be corrected to 100 percent. A score less than 80 percent would require retraining in all substandard areas, retesting before entry, and continuance of training in practice, application, and demonstration.

4) Integrity. Integrity of test questions depends on several factors.

a) Scope. A test for an initial trainee should include at least one question for each element contained in each training module. Ground training and testing for trainees in other curriculum segments, such as recurrent, may be less comprehensive, but should cover significant and timely subjects, particularly new material and changes since one's previous recurrent ground training.

NOTE: An element is a subgroup of related content within a training module. It is the fourth level of curriculum detail (curriculum, curriculum segment, training module, element). For example: Weather is one training module; domestic weather reports, international weather reports, and the use of actual and prognostic weather charts are elements.

b) Library. A library of questions should be developed that thoroughly cover the training objectives.

c) Multiple Questions. Where possible, multiple questions should be developed for each training objective.

d) Uniqueness. Tests should be generated by random selection of questions from the library, so that no two tests are alike.

e) Currency. Test questions should be reviewed as often as necessary to assure their relevancy, and to incorporate new or changed material.

J. Integrity of Test Answers. Trainers should develop measures by which the identity of a person taking the test may be confirmed, and printed or electronic test answers may not be reproduced and distributed among trainees so as to beat the test.

K. Operations and Maintenance. Includes quality control (QC) procedures for the collection, protection, and analysis of data for tracking training effectiveness; also, a strategy for equipment upgrade, program adjustments driven by data, and feedback from trainers and trainees.

1) A description of the overall training process, its attributes, and mechanisms for improvement using validation tools would be required for approval. Acceptable attributes would include responsibility, process, controls, measurement, improvement process, and any interface.

2) Qualification as an aircraft dispatcher requires knowledge. Because of the critical nature of that knowledge, an effective training program requires practice, application, and demonstration of that knowledge. Knowledge can be taught through DL. Initially, practice, application, and demonstration must occur in a classroom, instructor-led environment,

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accomplished by a physical/verbal practice of skills that encourages interaction among participants for the specific area of knowledge.

3) DL can be incorporated in new and existing training programs.

4) Up to a 50 percent DL and 50 percent classroom, Instructor-Led Training (ILT) program may be initially approved, in each of the pertinent training categories (initial new-hire training, transition training, recurrent training, and requalification training) based on the merits of the proposed program. The 50 percent DL may be increased in any pertinent training category based on the sophistication and innovation of the DL.

5) Incorporation of process in the approved training program will place the 50/50 (more or less) where it needs to be, based on performance.

L. Interactivity. Training developers should provide for interactivity between trainees and instructors, and between the trainees themselves.

1) In the Field. In particular, a trainee should have ready access to an authorized ground instructor on weekdays during normal business hours to resolve questions encountered during DL and pertinent testing.

2) At a Centralized Training Location. Before any phase of training that incorporates practice, application, and demonstration, trainees should be convened in a proctored classroom setting with an instructor to resolve any remaining issues arising during DL. This interactivity is particularly beneficial in respect to standardization of trainees in initial new-hire and initial equipment curricula.

3-1662 DRUG AND ALCOHOL TESTING PROGRAM AND INCLUSION IN BASIC INDOCTRINATION TRAINING.

A. Drug and Alcohol Testing Programs. The regulations require 14 CFR part 119 certificate holders operating under 14 CFR parts 121 and/or 135 to obtain OpSpec A449 to certify compliance with the drug and alcohol testing regulations. The operator's drug testing program must include an Employee Assistance Program (EAP) that includes education and training on drug use and abuse for employees. Operators must distribute educational materials that explain the alcohol misuse program regulatory requirements and the operator's policies and procedures.

B. Responsibility for Surveillance, and Enforcement of Operator Drug and Alcohol Training. The Drug Abatement Division (AAM-800) is responsible for the surveillance and enforcement of drug and alcohol testing programs that includes the training requirements under the regulations. POIs who receive drug and alcohol testing documentation other than information for OpSpec A449 should return them to the operator with instructions to submit them to the FAA at the following address: Federal Aviation Administration, Drug Abatement Division, AAM-800, 800 Independence Avenue, SW, Room 806, Washington, D.C. 20591, (202) 267-8442.

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C. Inclusion of Operator Drug and Alcohol Training Programs as a Module in Basic Indoctrination and Recurrent Training Curriculum Segments. Operators may, but have no requirement to, include EAP training (part of the operator's overall drug and alcohol training program) as a module in the operator's basic indoctrination and recurrent training. POIs have no requirement to review the EAP training module content or to conduct surveillance of the training conducted in the EAP training module. Direct any concern about operators' EAP module to AAM-800.

1) Credit for EAP Training Module Hours. Operators who have currently approved training curriculums and who wish to receive credit for EAP training hours should submit a revised outline for the basic indoctrination and recurrent training curriculum segment, including the EAP module, to the POI. The operator's outline must indicate the additional number of course hours required to include EAP training. POIs and operators may not count these hours in the total hours of the basic indoctrination and recurrent training curriculum segment. The POI will stamp the revised pages/control page of the curriculum segment outline according to the instructions in Volume 3, Chapter 19, Section 2.

2) New Operator Awareness of EAP Training Requirements. Inspectors who are responsible for certificating new operators must ensure that the operators are aware that they may take credit for the training hours in the basic indoctrination curriculum segment. POIs must also ensure that the operators know of the EAP training requirements. POIs must ensure that an operator's basic indoctrination and recurrent training curriculum segment outline lists the operator's proposed training hours.

D. Points of Contact (POC). Operators or POIs with questions about EAP training program content should contact AAM-800.

3-1663 EVALUATION OF AN AIRCRAFT DISPATCHER BASIC INDOCTRINATION CURRICULUM SEGMENT OUTLINE FOR INITIAL APPROVAL. Inspectors must determine whether the training modules in the operator's basic indoctrination curriculum segment outline contain the required information for aircraft dispatchers to fully understand the operator's manner of conducting operations, the operator's means of regulatory compliance, and the guidance materials pertinent to an aircraft dispatcher's duties and responsibilities. Inspectors should use the job aid in this section when evaluating an operator's proposed aircraft dispatcher basic indoctrination curriculum segment outline (see Table 3-83, Aircraft Dispatcher Basic Indoctrination Training Job Aid).

A. Basic Indoctrination Curriculum Segment Job Aid. This job aid (see Table 3-83) is provided for guidance only and must not be construed as being a document that contains mandatory rules or regulatory requirements. The job aid is intended to assist inspectors during the evaluation of individual basic indoctrination training curriculum segment modules.

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B. Use of Job Aid.

1) When using the job aid, inspectors should make a side-by-side comparison of the operator's proposal to make the following determinations:

- Whether the proposal serves to acquaint the student with the operator's procedures, policies, practices, and methods of compliance; and
- Whether sufficient training module elements are listed to ensure that the appropriate depth and scope of the material will be presented.

2) The job aid is organized with training subjects listed in the left column and evaluation criteria or remarks listed across the top. Inspectors may use the spaces within the matrix for items such as notes, comments, dates, or checkmarks. There are also blank columns and rows in each job aid for inspectors to include additional training modules or evaluation criteria. This job aid is not intended to be retained after entry of the data into the Safety Assurance System (SAS) automation. This section is related to SAS Element 3.1.1, (OP) Training and Qualifications of Dispatchers and Flight Followers.

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Table 3-83. Aircraft Dispatcher Basic Indoctrination Training Job Aid

TRAINING SUBJECTS	EVALUATION CRITERIA				
	Adequacy of Elements/Events	Adequacy of Courseware	Training Aids and Facilities		
Company Orientation					
Operator Policies and Procedures, Including the Drug and Alcohol Program					
Dispatcher, General Operations Manual (GOM), Weather Manuals					
Operations Specifications (OpSpecs)					
Title 14 of the Code of Federal Regulations (14 CFR) and Applicable Rules/Regulations					
Part 91, Subpart B Flight Rules					
Part 121, Subpart I Airplane Performance Operating Limitations					
Part 121, Subpart P Aircraft Dispatcher Duty Time					
Part 121, Subpart P Aircraft Dispatcher Qualification					
Part 121, Subparts Q and R Crew Duty Time					

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TRAINING SUBJECTS	EVALUATION CRITERIA				
	Adequacy of Elements/Events	Adequacy of Courseware	Training Aids and Facilities		
Part 121, Subpart T Flight Operations					
Part 121, Subpart U Dispatching and Flight Release Rules					
U.S. and Int'l Aeronautical Information Manual (AIM), International Civic Aviation Organization (ICAO) Flight Planning Doc.					
Title 49 of the Code of Federal Regulations (49 CFR) Parts 1542 and 1544					
49 CFR Part 830					
Dispatch Resource Management (DRM)					

RESERVED. Paragraphs 3-1664 through 3-1680.

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VOLUME 3 GENERAL TECHNICAL ADMINISTRATION

CHAPTER 24 EVALUATE 14 CFR PARTS 91 SUBPART K/121/135.411(A)(2) MAINTENANCE TRAINING PROGRAM RECORD

Section 1 Safety Assurance System: Training Program Evaluation

3-1891 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) fractional ownership operations, use activity codes 3633 and 5633.

B. Safety Assurance System (SAS). For 14 CFR parts 121 and 135, use Safety Assurance System (SAS) Automation and the associated Data Collection Tools (DCT).

3-1892 OBJECTIVE. This section provides guidance for evaluating and accepting a certificate holder/applicant's or fractional program manager's (hereafter referred to as the program manager) maintenance/inspection training program.

3-1893 GENERAL. Effective training is the basis for a successful maintenance/inspection program. Although many procedures for maintaining and inspecting aircraft may be similar, the equipment, procedures, and task documentation used may all be unique to the certificate holder's/program manager's/applicant's specific programs.

A. Maintenance/Inspections. Title 14 CFR part 91K and part 135 may require, and parts 121 and 145 do require, that maintenance/inspections be performed in accordance with the certificate holder/applicant's or program manager's manual.

B. Maintenance/Inspection Training Programs. Maintenance/inspection training programs are the most efficient manner to inform personnel of the requirements of the certificate holder/applicant's or program manager's program.

3-1894 COORDINATION REQUIREMENTS AND SCHEDULING. Aviation safety inspectors (ASI) should encourage applicants to discuss pending maintenance/inspection training program development with the certification team before the program is submitted for final acceptance. It is especially important that programs be reviewed for conformity with appropriate regulatory requirements. This review can reduce the number of major changes a certificate holder will have to make after a program has been printed and distributed.

3-1895 SCHEDULING MAINTENANCE TRAINING PROGRAMS. Delays in program acceptance result in delays in the certification process, or in the case of fractional ownership programs, delays in issuance of management specifications (MSpecs). To facilitate the evaluation of the training programs, the applicant should be encouraged to schedule a classroom training session in a timely manner.

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3-1896 CONTENT OF MAINTENANCE/INSPECTION TRAINING PROGRAMS. The program manager's Continuous Airworthiness Maintenance Program (CAMP) or certificate holder/applicant's training program should include company indoctrination and technical training (formal and on-the-job training (OJT)). The program should contain a list of tasks to be taught and a method for recording the training. Completion of the training must be entered in the individual's training record.

A. Company Indoctrination. Each maintenance/inspection employee should receive instruction in the use of the certificate holder/program manager/applicant's manuals, policies, procedures, and forms. The training program should contain a policy statement that emphasizes the importance of following the certificate holder's documented maintenance procedures without deviation. Additionally, the program should include information pertaining to the certificate holder's procedures for identifying errors or deficiencies in maintenance procedures and actions to be taken to ensure safe Federal Aviation Administration (FAA)-acceptable practices and Airworthy aircraft.

B. Maintenance/Inspection Technical Training.

1) Training may consist of a combination of formal (classroom) instruction and OJT. The certificate holder/program manager/applicant may give training credit to individuals for experience gained while employed by other certificate holders/program managers.

2) Procedures unique to the certificate holder/program manager/applicant should be taught. Training records should indicate the amount of formal training, OJT, and experience each individual receives.

3) Technical training may be contracted to another certificate holder or manufacturer, or in the case of a specialized process, to a person knowledgeable in that specialized process. The certificate holder/program manager/applicant is responsible for the content and quality of such training.

4) The FAA does not establish a fixed amount of time for indoctrination or technical training courses, but the courses should use a minimum time proportional to the certificate holder/program manager/applicant's complexity.

C. Responsibilities for Persons Other than a Certificate Holder/Program Manager's Employees. Part 121 requires each certificate holder to be primarily responsible for having a training program and to ensure that the training received throughout the certificate holder's system is of equal quality and effectiveness. This covers all personnel, such as the certificate holder's employees and contract personnel for emergency maintenance and servicing.

1) Part 91, § 91.1433; part 121, § 121.375; and part 135, § 135.433 are similar in that each certificate holder or person who performs maintenance shall have a training program. The training program ensures that each person, including inspection personnel, is fully informed about procedures, techniques, new equipment in use and is competent to perform the applicable duties.

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2) Sections 91.1429(a), 121.371(a), and 135.429(a) are similar in that no person may use any person to perform required inspections unless the person performing the inspections is appropriately certificated, properly trained, qualified, and authorized to do so.

NOTE: Title 14 CFR part 1 defines "a person" as an individual, firm, partnership, corporation, company, association, joint-stock association, or governmental unit.

D. Category (CAT) II/III Maintenance Personnel Training. Each applicant for CAT II/III must establish an initial and recurrent training program. This program must be acceptable to the Administrator and cover all personnel performing quality control inspection and maintenance work on CAT II/III airborne systems and equipment. Training records for such personnel are to be kept current and made available to the FAA for inspection.

E. Recurrent Training. The certificate holder/program manager/applicant's training program should ensure that deficiencies discovered through continuous analysis and surveillance are corrected during recurrent training. Fractional ownership program manager's personnel who are responsible for maintenance are required to receive annual training. Additionally, recurrent training should include at least the following:

- Review, reinforcement, and upgrade of all training given in both indoctrination and technical subjects,
- Input from maintenance bulletins and/or maintenance newsletters, and
- Tasks, such as run-up/taxi, Required Inspection Items (RII), and nondestructive inspection (NDI).

F. Training Records. Training records must be retained by the certificate holder/program manager/applicant to document that personnel are adequately trained. Training records should be maintained at a central location, but may be maintained at other locations, provided these locations are listed in the certificate holder/program manager/applicant's manual. The format for recordkeeping may be electronic, or any other media acceptable to the Administrator.

G. Special Emphasis Training. Special maintenance/inspection training programs are required when new or different types of aircraft and/or equipment are introduced.

H. Fractional Ownership Training Requirements. Fractional ownership programs require aircraft-specific technical training for those persons who are responsible for maintenance. This training is intended for persons within the fractional ownership program who oversee and/or schedule maintenance and inspections and are responsible for creating or amending the manager's inspection or maintenance program(s). The training, which is required both initially and annually (recurrent), ensures that those personnel are technically knowledgeable of the aircraft. This specific training requirement does not extend to the persons performing the maintenance. However, all maintenance personnel must still meet the requirements of the applicable regulations, such as 14 CFR parts 43, 65, and 145.

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I. Fractional Ownership CAMP. Program managers who maintain their aircraft in accordance with a CAMP have additional training requirements. Section 91.1433 requires that the program manager, or person performing maintenance for the program manager, has a training program. This program must ensure that each person, including inspection personnel, who determines the adequacy of work performed is fully informed about the procedures, techniques, and new equipment in use and is competent to perform the work. Section 91.1429 also requires any person who performs required inspections to be properly trained. This is in addition to his or her certification, authorization, and qualification requirements.

3-1897 ACCEPTING THE MAINTENANCE/INSPECTION TRAINING PROGRAM. The task of acceptance differs from approval in that no specific procedure or vehicle is used to accept a training program. See Volume 3, Chapter 32, Section 6, Evaluating, Accepting or Approving Maintenance-Related Manuals, Procedures, and Checklists for comprehensive information on the acceptance process.

3-1898 COORDINATION REQUIREMENTS. This task requires coordination with maintenance, avionics, and regional specialists.

3-1899 REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions):

- Title 49 of the United States Code (49 U.S.C.) § 44705.
- Title 14 CFR parts 65, 91K, 121, 135, and 145.
- Title 49 of the Code of Federal Regulations (49 CFR) part 173.
- 8900.1 Volume 10, Safety Assurance System Policies and Procedures.

B. Forms. None.

C. Job Aids. Job Task Analysis (JTA): 3.3.20.

3-1900 PROCEDURES.

A. Review Certificate Holder/Program Manager File.

B. Review Schedule of Events (SOE). If this task is performed as part of an original certification or issuance of MSpecs, review the SOE to ensure that this task can be accomplished in accordance with the schedule.

C. Review Maintenance/RII Training Programs. The program should include the following elements in both the maintenance training program and the RII training program.

1) The name of the person responsible for the overall administration of the maintenance/RII training program.

2) The name(s) of the person(s) responsible for other processes within the maintenance/RII training program (e.g., recordkeeping, revisions to training programs, and security of the program).

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3) Designated maintenance/RII training instructors.

4) A description of how instructors are determined to be qualified.

5) Procedures used to authorize instructors.

6) A file on the instructors consisting of qualifications, authorizations, and other documents pertaining to instructor assignments.

7) A list describing what type of training is required for new employees or RII candidates (indoctrination, OJT, etc.).

8) Procedures for evaluating, crediting, and documenting a new employee's previous training.

9) Procedures for determining what additional training is required for a new employee.

10) A schedule for recurrent training, a description of recurrent training, and procedures for determining requirements for other training.

11) Recordkeeping procedures, including records of the following:

- Training dates,
- Who performed the training (instructor should indicate by signing),
- The number of hours of training performed, and
- The content of the training performed.

12) Criteria for determining the quality of the training program (training standards).

13) Evaluation of the need to revise training programs.

14) A training syllabus that describes the following:

- Content of each training course,
- Format of training (classroom, OJT),
- Duration of training courses,
- Standards for grading students, and
- Training aids.

15) Criteria to determine acceptability of contract training, to include:

- Qualifications of instructors,
- Criteria to establish appropriateness of reference material being taught,
- Reporting procedures to inform the certificate holder/program manager of student progress,
- Criteria to determine adequacy of facilities, and
- Criteria to evaluate contractor's training syllabus.

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D. Review RII Training. The certificate holder/program manager/applicant must provide RII original and recurrent training, including:

1) A statement that RII students are appropriately certificated, qualified, trained, authorized, and current as airframe and/or powerplant mechanics or appropriately certificated repairmen.

NOTE: Part 91K does not allow repairmen to be used for RII purposes.

2) A method for notifying the RII candidate of the successful completion of the course.

3) A method for receiving confirmation by the candidate of acceptance of RII authorizations and responsibilities.

E. Observe Certificate Holder/Program Manager/Applicant Performing Training. This observation is performed regardless of whether the certificate holder/program manager performs the training or contracts with another company.

1) Ensure that facilities are adequate, including classrooms, training aids, and reference materials.

2) Evaluate the instructor's presentation and knowledge.

3) Ensure that course content and instruction is in accordance with the training syllabus.

4) Ensure that training recordkeeping is performed in accordance with the maintenance/RII inspection program.

F. Analyze Findings. Evaluate all deficiencies to determine what changes will be required.

G. Debrief the Certificate Holder/Program Manager/Applicant.

1) If deficiencies are discovered during the interview, return the program to the certificate holder/program manager/applicant with a letter describing the problem areas. If the review is being performed as part of a certification, inform the certificate holder/program manager/applicant that the issue of the certificate will be withheld until deficiencies are corrected.

2) Schedule a meeting with the certificate holder/program manager/applicant to discuss the problem areas if it may be helpful in resolving deficiencies. Discuss how to resolve deficiencies.

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3-1901 TASK OUTCOMES.

A. Complete PTRS Record. For part 91K.

B. Follow SAS Guidance. Follow SAS Guidance 8900.1 Volume 10, Chapter 5 for parts 121 and 135.

C. Complete the Task. Successful completion of this task will result in the following:

1) A letter to the certificate holder/program manager/applicant indicating acceptance of the program.

2) The original accepted program sent to the certificate holder/program manager/applicant along with instructions to provide a copy of the program to the certificate-holding district office (CHDO).

3) SAS successful completion of this task will result in the acceptance of the Maintenance Training Program or revision and/or a determination that the training is being performed properly and is producing the desired results.

D. Document the Task. File all supporting paperwork in the certificate holder/program manager/applicant's office file.

3-1902 FUTURE ACTIVITIES.

A. Part 91K. For part 91K, schedule normal surveillance as required.

B. Parts 121 and 135. For parts 121 and 135, follow SAS guidance for planning and accomplishing future risk-based surveillance.

RESERVED. N/A.

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VOLUME 3 GENERAL TECHNICAL ADMINISTRATION

CHAPTER 24 EVALUATE 14 CFR PARTS 91 SUBPART K/121/135.411(A)(2) MAINTENANCE TRAINING PROGRAM RECORD

Section 2 Safety Assurance System: Evaluate and Accept a Maintenance Human Factors Training Program

3-1903 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 activity codes 4306, 4307, 6306, and 6307.

B. Safety Assurance System (SAS). For 14 CFR parts 121/135, use SAS automation. This section is related to SAS Element 4.1.3, (AW) Maintenance/RII Training Program.

3-1904 OBJECTIVE. This section provides guidance for the evaluation, acceptance, and, in certain scenarios, approval of human factors training programs. Inspectors may also use this guidance for acceptance of human factors training programs for both the Aviation Maintenance Technician (AMT) awards and Inspection Authorization (IA) renewals.

3-1905 GENERAL.

A. Effective Training. Effective training is the basis for a successful maintenance and inspection program. Although many procedures for maintaining and inspecting aircraft may be similar, the equipment, procedures, and task documentation vary widely depending on the operator/applicant's specific program. Human factors training plays an essential part in identifying those areas and is the most efficient manner of educating maintenance technicians and others of the importance of good human factors principles, practices, and techniques.

B. Human Training Programs. Numerous airlines, repair stations, and training organizations now provide human factors training and desire Federal Aviation Administration (FAA) recognition of their training programs. This document will provide guidance in accepting or approving these vital human factors training programs.

C. AMT Awards Program. In October 1991, the Aircraft Maintenance Division (AFS-300) determined a need for an incentive program to encourage training recognition for AMT employees and employers. Human factors training is now an acceptable portion of the training for the AMT Awards Program.

3-1906 DISCUSSION.

A. Human Factors Issues. Human factors issues contribute to approximately 80 percent of all aviation accidents and incidents. Factors that influence the human must be recognized, identified, and communicated. Maintenance procedures and controls can then be used to reduce or prevent outside influences that cause performance mistakes. Research and experience have shown that human factors training can address many of the issues that contribute to these

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maintenance events. Attention to maintenance human factors can raise efficiency, effectiveness, and safety in aviation environments. This translates to better expense control and long-term safety benefits.

B. Maintenance Human Factors Training. Maintenance human factors training is part of a total system in managing human error. It is an essential part of a system aimed at individuals engaged in hands-on maintenance, and those who supervise and plan maintenance activity. Human factors training should cover basic safety principles and practices integrated within a maintenance organization's program.

C. Objective. The objective of human factors training is to provide principles and techniques that will help operators do a better job by:

- Improving safety;
- Decreasing organizational exposure to risk;
- Reducing and capturing errors; and
- Encouraging employees to report safety issues and concerns without fear of retribution.

NOTE: These objectives contribute to the FAA's safety goal of achieving the lowest possible accident rate and continuously improving safety.

D. Designing Human Factors Training. Designing human factors training for specific organizations is often most effective considering such factors as:

- Characteristics of the people in the work force;
- Physical and social conditions of the work environment;
- Type of work being performed, like heavy maintenance, light maintenance, aircraft line maintenance, and aircraft size and type; and
- Resources necessary to complete the work safely and efficiently.

E. Initial/General Human Factors Training. For initial or general human factors training, it may not be necessary for an operator to conduct an extensive job and task analysis, but to merely understand the most important safety concerns within its organization. There are many fundamental principles of human factors that apply to all maintenance work.

F. Proposed Training Plans. The aviation safety inspector (ASI) should review proposed human factors training to ensure its focus on "real-world" human factors challenges faced in aviation maintenance or related work. Proposed training plans that lack sound fundamentals or examples of real world aviation maintenance challenges are likely not as acceptable or desirable for aviation maintenance human factors training.

G. Design of Human Factors Training. The design and delivery of repeated, recurrent, or continued human factors training within a specific organization should have as its basis company-specific examples derived from its event investigation system data. AMTs learn best from specific examples within their own organization.

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H. Commercial Multimedia Human Factors Training Products. A number of commercial multimedia human factors training products should receive consideration for an accepted or approved training program. However, these products are best when discussion led by a credible human factors instructor supplements them. The ASI must review all media and movies that the application package includes to ensure suitability for all types of audiences.

I. Aviation Maintenance/Human Factors Discipline. The instructor should have capabilities and experience related to aviation maintenance and/or the human factors discipline that a reasonable person would accept as credible. The instructor should have effective communication skills and the ability to convey credibility to the majority of the students or course participants. An acceptable course leader's most highly preferred attribute is experience in aviation maintenance.

3-1907 CONSIDERATIONS FOR ACCEPTABLE CONTENT.

A. Acceptable Topics. An unlimited number of human performance topics are acceptable for all types of human factors training. Approval of content should be at the discretion of the FAA ASI and may require additional discussion or correspondence with the applicant. The ASI should consider the size of an organization and the work it performs when reviewing an organization's human factors training program.

B. Key Topics in a Good Human Factors Training Program. The FAA's maintenance human factors experts along with other regulatory agencies, including the European Aviation Safety Agency (EASA) and Transport Canada (TC), have identified the following key topics that a good human factors training program is likely to include:

1) A general introduction to human factors.

2) Safety culture/organizational factors.

3) Human error—error principles, event investigation, and case studies.

4) Human performance and limitations.

5) Environments, both physical and social.

6) Organizational procedures, information, tools, and proper task documentation and sign-off practices.

7) Planning of tasks, equipment, and spares.

8) Communication and the lack thereof.

9) Teamwork and leadership.

10) Professionalism and integrity.

11) Shift and task turnover.

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12) Undocumented maintenance.

13) Complacency.

14) Lack of knowledge.

15) Distraction.

16) Lack of resources.

17) Pressures.

18) Lack of assertiveness.

19) Norms.

20) Stress.

21) Lack of awareness.

22) Fatigue management/fitness for duty.

23) Procedural noncompliance.

C. Supportive Content. The ASI should still consider content not included in subparagraph 3-1907B if it directly relates to a case study or other scenarios that support human factors initiatives.

3-1908 HOURS OF HUMAN FACTORS TRAINING CREDIT. A formal block of human factors training lasting at least 50 minutes constitutes 1 hour of training. For the AMT awards program, refer to the current edition of Advisory Circular (AC) 65-25, William (Bill) O'Brien Aviation Maintenance Technician Awards Program, for details on acceptable hours of human factors training credit. The FAA will also accept up to 6 hours of human factors training towards IA renewal.

3-1909 APPLICATION PROCESS.

A. Course Review. For review of a human factors training program, an applicant should contact the FAA office in person, make arrangements to have a meeting, or submit a letter of request for course review to the local FAA office. The applicant must provide all material used for the training to the FAA to ensure proper course review.

B. Non-U.S. Organizations' Courses. Non-U.S. organizations also provide training in areas required by their aviation authority that may crossover to required training such as human factors. These courses may receive acceptance or approval using this guidance, but exercise caution during the review process to ensure they do not embed foreign aviation authority regulations, which could confuse technicians on FAA regulatory and nonregulatory requirements. The foreign applicant should contact its closest regional FAA office for further assistance.

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C. Determining Delivery Options for Unconventional Training. Applicants using any unconventional or non-traditional means of providing human factors training (such as computer-based instruction (CBI), satellite-delivered media, Internet, etc.) or nonconventional training will submit it to AFS-300 for review to determine a suitable means of delivery.

3-1910 RECONSIDERATIONS.

A. Notification of Unacceptability. If the FAA determines that a course is unacceptable, it will notify the training provider in writing and explain why. We highly recommend that the training provider work closely with the FAA office to understand why the training program was unsatisfactory and to remedy the training deficiencies as soon as possible.

B. Reconsideration Request. If the training provider does not agree with the reviewing office regarding the nonacceptance, the training provider may request reconsideration of the decision by writing to: FAA Headquarters, Aircraft Maintenance Division, AFS-300, 800 Independence Ave. SW, Washington, DC 20591.

C. Final Decision. AFS-300 will make the final decision on the request for reconsideration. AFS-300 will directly forward the decision to the training provider with a copy to the associated FAA office. The AFS-300 decision may affirm, modify, or reverse the initial decision.

3-1911 RELATED REGULATORY AND CONTENT GUIDANCE. For more information, consult the following documents (current editions):

A. Title 14 CFR Part 1. Definitions and Abbreviations.

B. Title 14 CFR Part 43. Maintenance, Preventive Maintenance, Rebuilding, and Alteration.

C. AC 120-16. AC 120-16, Air Carrier Maintenance Programs, which describes air carrier aircraft maintenance programs. It explains the background as well as the FAA's regulatory requirements for these programs.

D. AC 120-66. AC 120-66, Aviation Safety Action Program (ASAP), which provides information encouraging air carrier and repair station employees to voluntarily report critical safety information.

E. AC 120-72. AC 120-72, Maintenance Resource Management Training, which presents guidelines for developing, implementing, reinforcing, and assessing maintenance resource management training programs for improving communication, effectiveness, and safety in maintenance operations. This AC also provides a training template.

F. AC 120-78. AC 120-78, Acceptance and Use of Electronic Signatures, Electronic Recordkeeping Systems, and Electronic Manuals, which provides information on electronic recordkeeping.

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G. AC 120-79. AC 120-79, Developing and Implementing an Air Carrier Continuing Analysis and Surveillance System, which provides information on how to implement a Continuing Analysis and Surveillance System (CASS), which part 121 requires for air carriers.

H. AC 120-92. AC 120-92, Safety Management Systems for Aviation Service Providers, which provides information on how to develop a Safety Management System (SMS).

I. FAA Order 8900.1. Volume 3, Chapter 24, Section 1, Training Program Evaluation, provides guidance for evaluating and accepting an operator/applicant's maintenance/inspection training program.

J. FAA Operator's Manual for Human Factors in Aviation Maintenance. The FAA Operator's Manual for Human Factors in Aviation Maintenance, which provides information on how to implement a human factors program in maintenance. The manual is available at http://www.faa.gov/about/initiatives/maintenance_hf/library/documents/media/human_factors_maintenance/hf_ops_manual_2014.pdf.

K. Air Transport Association of America (ATA) Specification 104. ATA Specification 104, Guidelines for Aircraft Maintenance Training, provides guidance on training development, including task analysis and industry-defined training levels. This document is available at https://publications.airlines.org/CommerceProductDetail.aspx?Product=11.

L. Further Information. You can obtain further information regarding the 12 common causes of maintenance human factor errors (included in paragraph 3-1907) from the TC link below: http://www.tc.gc.ca/eng/civilaviation/standards/systemsafety-posters-menu-723.htm. Additionally, many aviation training and consulting organizations provide excellent information regarding the "dirty dozen," which you can easily reference using the Web.

3-1912 PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. Knowledge of the regulatory requirements of 14 CFR parts 43 and 65.

B. Coordination. This task may require coordination with other Flight Standards District Offices (FSDO), certificate management offices (CMO), and International Field Offices (IFO).

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3-1913 REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions):

- AC 65-25, William (Bill) O'Brien Aviation Maintenance Technician Awards Program.
- AC 120-72, Maintenance Resource Management Training.
- FAA's Operators Manual for Human Factors in Aviation Maintenance.
- Volume 3, Chapter 24, Section 1, Safety Assurance System: Training Program Evaluation.
- Volume 5, Chapter 5, Section 7, Evaluate Part 65 Inspection Authorization.

B. Forms:

- FAA Form 8310-5, Inspection Authorization.
- FAA Form 8610-1, Mechanic's Application for Inspection Authorization.
- Aviation Maintenance Technician Awards Certificates.
- Aviation Maintenance Technician Awards Brochure.

C. Job Aids. None.

3-1914 PROCEDURES.

A. Ensure Applicant Meets Eligibility Requirements.

B. Evaluate Training Program Content.

1) The procedures for obtaining the training program approval normally begin with a meeting between the training provider's key personnel and the principal inspector (PI) or responsible ASI to discuss the scope of the training, the timing of the program document submittal, and other issues. This meeting will be an opportunity for the training provider to ask questions about the FAA process. Although highly recommended, this is not a required meeting.

2) The training provider may submit its training program contents as electronic media if it ensures the reviewing FAA office is able to look at and store the submitted material in the media the training provider selects. A transmittal document must accompany material submitted electronically. These transmittal documents may be in the form of an email, fax, or letter and may include the use of electronic signatures. The training provider's accountable manager or someone acting on the manager's behalf should sign the submittal. If a program is too large to send electronically, it will be the responsibility of the training provider to make alternate arrangements to deliver the program to the FAA office for review.

3) The reviewing FAA office may use the criteria and standards described in AC 120-72 and the items listed in paragraph 3-1907 to review the content of the initial training program. Not every item listed in the guidance needs to appear in the training, but the reviewing office should use the list to suggest items that better meet the needs of the maintenance organization.

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4) The FAA will review the proposed training program or revision and either approve it or prepare an explanation of why the program or revision is not acceptable as submitted. The reviewing office will send a letter or electronic transmittal of its approval or nonacceptance to the individual who signed the submittal for the training.

5) If the FAA does not accept a submittal, the training provider should propose revisions that address the FAA's concerns. When the training provider has adequately addressed all the concerns expressed in the FAA nonacceptance, the FAA will accept and/or approve the program.

6) The training provider or input from the PI or responsible ASI can initiate a change to the accepted or approved training program. The training provider should provide any revision to the program document to the inspector for further acceptance or approval. The training program may change to accommodate modifications to the training provider's work, and/or its customers, and in response to the ongoing assessment processes of the customer and of the FAA. Correction of typographical errors and changes to phone numbers are examples of changes not requiring FAA acceptance or approval. However, the training provider should send a corrected copy to the FAA.

7) The instructor should have capabilities and experience related to aviation maintenance and/or the human factors discipline that a reasonable person would accept as credible. The instructor should have effective communication skills and the ability to convey credibility to the majority of the students or course participants. Experience in aviation maintenance is an acceptable course leader's most highly preferred attribute.

8) The FAA does not determine instructor qualifications. However, if the FAA—through its surveillance process—finds that the qualifications or skills of an instructor are deficient, the training provider must correct any deficiency associated with that instructor and with its instructor selection.

9) The training program should have a process measurement element that verifies the effectiveness of the training. This provides a continuous improvement characteristic to the training program. Therefore, one of the key areas the FAA will monitor is the feedback process that takes evaluation results and adjusts training needs. The FAA might also independently assess training to evaluate the effectiveness, particularly where safety risk is relatively high.

10) If the program or program revision submittal is in an electronic format, the FAA inspector will indicate acceptance, approval, or nonacceptance with an email message or letter. If the FAA denies the submittal, the email message or letter will include an explanation of the denial.

11) The training provider should initiate its revision process as follows. The training provider or operator informs the FAA that it is planning to submit a training program for approval by way of an initial meeting in person, or a letter of request sent to its local FAA office.

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12) The FAA may initiate the training program acceptance or nonacceptance process as follows. When review of the training program or revision has shown compliance with the form and manner prescribed in this chapter, the FAA issues a letter of acceptance. See Figure 3-217, Example Letter of Acceptance, Figure 3-218, Example Letter of Acceptance (AMT Awards Program), and Figure 3-219, Example Letter of Nonacceptance.

13) When rejecting review for approval of the training program or revision, issue a letter of nonacceptance, with an explanation of discrepancies; you may use the letter of acceptance format.

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Figure 3-217. Example Letter of Acceptance

XYZ Training
Accountable Manager
123 Anywhere Blvd
Somewhere, PA 13579

Dear Mr. Trainer,

The FAA is pleased to notify you we have reviewed and accepted the XYZ human factors training course for the purpose you submitted with the revision date of [XX/XX/XX].

As a training provider of an FAA-accepted course you must:

- Keep the course material current and complete according to the original submission.
- Facilitate it in the intended manner and length.
- Allow Flight Standards to monitor sessions presented under this letter of acceptance. In addition, provide all training materials the attendees would receive, upon the request of the FAA individual monitoring the training.
- Upon completion of training, provide the attendees with a certificate verifying their completion of the FAA-accepted training, and the total length of time for the course.
- Maintain a list of attendees or training records to document that personnel have received adequate training in human factors, to be available to any FAA office upon request.

You may revise the course at any time using one of the following two methods:

1. Change: These are minor updates, alterations, and deletions that constitute minimal course revisions to the original material. The training provider does not have to notify the FAA of these types of changes.

2. Revisions: These are major rewrites to the original course material submitted for acceptance. Revisions may include changing course subjects, subtracting or adding course material not found in the original course. The training provider must submit the revision to this office for review and acceptance at least 30 days prior to facilitating the revised course. After reviewing and accepting the modifications, the FAA will issue a new letter of acceptance in accordance with the current edition of AC 65-25.

Again, congratulations and thank you for your interest in maintenance human factors, and your commitment to maintenance training, and aviation safety. Should you have any further questions, contact this office at [(XXX) XXX-XXXX].

Sincerely,

John J. Inspector
Aviation Safety Inspector
800 Independence Ave. SW
Washington, DC 20591

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Figure 3-218. Example Letter of Acceptance (AMT Awards Program)

ABC Training
Accountable Manager
456 Anywhere Blvd
Anywhere, PA 24680

Dear Mr. Trainer,

The FAA is pleased to notify you we have reviewed and accepted the ABC human factors training course for the purpose you submitted. As of this date, the training course provided with the revision date of [XX/XX/XX] meets the requirements specified in the current edition of AC 65-25 and is granted [X] hours of credit towards the AMT Awards Program.

As a training provider of an FAA-accepted course you must:

- Keep the course material current and complete according to the original submission.
- Facilitate it in the intended manner and length.
- Allow Flight Standards to monitor sessions presented under this letter of acceptance. In addition, provide all training materials the attendees would receive, upon the request of the FAA individual monitoring the training.
- Upon completion of training, provide the attendees with a certificate verifying their completion of the FAA-accepted training, and the total length of time for the course.
- Maintain a list of attendees or training records to document that personnel have received adequate training in human factors, to be available to any FAA office upon request.

Please advise those individuals successfully completing this training that the FAA will accept the total hours of your training program towards the AMT Awards Program. Simply have them provide a copy of their training certificate to their local FAA office when applying for the AMT award.

You may revise the course at any time using one of the following two methods:

1. Change: These are minor updates, alterations, and deletions that constitute minimal course revisions to the original material. The training provider does not have to notify the FAA of these types of changes.

2. Revisions: These are major rewrites to the original course material submitted for acceptance. Revisions may include changing course subjects, subtracting or adding course material not found in the original course. The training provider must submit the revision to this office for review and acceptance at least 30 days prior to facilitating the revised course. After reviewing and accepting the modifications, the FAA will issue a new letter of acceptance in accordance with the current edition of AC 65-25.

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Again, congratulations and thank you for your interest in maintenance human factors, and your commitment to maintenance training and aviation safety. Should you have any further questions, contact this office at [(XXX) XXX-XXXX].

Sincerely,

John J. Inspector
Aviation Safety Inspector
800 Independence Ave. SW
Washington, DC 20591

Figure 3-219. Example Letter of Nonacceptance

XYZ Training
Accountable Manager
123 Anywhere Blvd
Somewhere, PA 13579

Dear Mr. Trainer,

This letter is in response to your request for acceptance of Revision 2 to XYZ training program/revision, dated [XX/XX/XX]. We have rejected your request for approval of revision 2 for the following reason(s). Revision 2 deletes training previously given on communications and fatigue and does not provide any additional type of identifiable instruction to your mechanics, repairmen, or technicians.

Presently, no other course of training for XYZ training contains adequate information on these important human factors issues. For further information, you may contact this office at [(XXX) XXX-XXXX].

Sincerely,

John J. Inspector
Aviation Safety Inspector
800 Independence Ave. SW
Washington, DC 20591

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3-1915 TASK OUTCOMES.

A. **Complete the PTRS Record.** For part 91K.

B. **Follow SAS Guidance Modules 4 and 5.** For parts 121/135.

3-1916 FUTURE ACTIVITIES. For part 91K, maintain routine surveillance. For parts 121/135, follow SAS guidance.

RESERVED. Paragraphs 3-1917 through 3-1920.

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VOLUME 3 GENERAL TECHNICAL ADMINISTRATION

CHAPTER 25 OPERATIONAL CONTROL FOR AIR CARRIERS

Section 4 Safety Assurance System: Part 121 Flag Operations, Supplemental Operations Outside the Contiguous States, and Extended Overwater Operations

3-1996 GENERAL. This section contains information and guidance for principal operations inspectors (POI) and aviation safety inspectors (ASI) who have oversight responsibility of certificate holders conducting Title 14 of the Code of Federal Regulations (14 CFR) part 121 flag operations, supplemental operations outside the contiguous United States, and extended overwater operations. The following general provisions apply to extended overwater operations. This section is related to Safety Assurance System (SAS) Subsystems 3.1 Training & Qualification, 3.2 Flight Operations Engineering, and 3.3 Flight Planning and Monitoring.

A. Instrument Flight Rules (IFR) and Visual Flight Rules (VFR) Authorizations. With limited exception, part 121 certificate holders must conduct extended overwater operations under IFR. Authorization to conduct extended overwater operations under VFR is limited to those allowed by Operations Specification (OpSpec) B051, Part 121 Visual Flight Rules Limitations and Provisions, which is narrow in its applicability.

B. Land Airplanes. A part 121 certificate holder may not operate a land airplane (except certain two-engine reciprocating-engine-powered airplanes listed in part 121, § 121.161(b)) in extended overwater operations unless the airplane is certified for ditching under 14 CFR part 25. When an aircraft is certified for extended overwater operations, these operations will appear as authorized operations in the limitations section of the approved Airplane Flight Manual (AFM).

3-1997 DESTINATION WEATHER MINIMUMS. Section 121.615(a) states the following: "No person may dispatch or release an aircraft for a flight that involves extended overwater operation unless appropriate weather reports or forecasts or any combination thereof, indicate that the weather conditions will be at or above the authorized minimums at the estimated time of arrival at any airport to which dispatched or released or to any required alternate airport." This regulation has been interpreted by the Federal Aviation Administration's (FAA) Office of the Chief Counsel (AGC) to mean that weather conditions must be forecasted to be above the required minimums at the estimated time of arrival (ETA), but that the weather conditions do not necessarily have to be above the required minimums at the time of dispatch or release.

A. OpSpecs Requirements. Weather minimums for departure, destination, and alternate airports minimums are prescribed in a certificate holder's OpSpecs.

B. Weather Forecasting for Extended Flight Operations. Extended overwater operations may require flight times of 10 or more hours. Since the certainty of weather forecasts deteriorates as the period of the forecast lengthens, meteorologists usually add conditional phrases to the remarks of these forecasts to alert the users to this uncertainty. As a result of these conditional remarks, some certificate holders may find it difficult to dispatch or release to the desired destination and to find acceptable alternate airports. Aircraft dispatchers and persons

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authorized to exercise operational control (flight followers) have a number of methods at their disposal, however, to overcome these limitations.

1) The installation of Category (CAT) II and CAT III approach aids have resulted in destination weather minimums as low as a ceiling of zero and a Runway Visual Range (RVR) of 300 feet. Modern facilities have also resulted in alternate weather minimums authorized by OpSpecs being reduced to as low as 400 feet and 1 mile.

2) Certificate holders may release a flight to an intermediate destination and then redispatch or rerelease the flight to the actual destination while the flight is en route. The redispatch or rerelease can be based on current weather reports and short-term forecasts.

3) Under an approved Enhanced Weather Information System (EWINS), a qualified aircraft dispatcher employed by a certificate holder may issue a flight movement forecast (FMF) based on a detailed analysis of the conditions surrounding the specific flight. An FMF may be used for operational control of the specific flight (see Volume 3, Chapter 26, Section 4).

3-1998 DESIGNATION OF DESTINATION ALTERNATE AIRPORTS.

Sections 121.621 and 121.623 contain alternate requirements for flag and supplemental operations. In accordance with §§ 121.625 and 121.631, weather reports, forecasts or any combination thereof, must indicate that the weather conditions will be at or above the authorized minimums at the ETA at any required alternate airport.

A. Destinations Without an Available Alternate Airport. Sections 121.621(a)(2) and 121.623(b) provide a certificate holder with the ability to dispatch or release flag or supplemental flights to a destination for which no alternate is available. This provision was originally provided for reciprocating aircraft operations en route to island destinations. The introduction of turbojet aircraft has largely negated the need for the rule; however, there are still some remote islands (such as Easter Island) for which the provision is still necessary. Operations to an airport without an available alternate typically require authorization in a certificate holder's OpSpecs.

1) For flag operations, § 121.621(a)(2) requires a route to a destination without an available alternate to be approved. POIs will use OpSpec C067, Special Airplane Authorizations, Provisions, and Limitations for Certain Airports, to authorize a destination airport that does not have an available alternate. For the purposes of C067 authorization, the only portion of the route that is required is the destination airport.

2) For supplemental operations, § 121.623 does not require specific approval for a route to an airport without an available alternate. However, OpSpec C067 is specifically designed to list airports for which there is no available alternate. Therefore, certificate holders conducting supplemental operations should list these airports in C067 for increased flightcrew awareness.

3) For all part 121 operations, certificate holders must list the airports for which there is no available alternate, in their manual in accordance with the requirements of §§ 121.133 and 121.135.

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4) Sections 121.641(b) and 121.643(c) require that turbopropeller and reciprocating-powered airplanes have enough fuel remaining upon arrival over the destination for the flight to continue for an additional 3 hours under normal cruise conditions.

5) Section 121.645(c) requires that turbojet-powered airplanes have enough fuel remaining upon arrival over the destination for the flight to continue for an additional 2 hours under normal cruise conditions.

B. All Other Supplemental Operations. Section 121.623 requires that certificate holders designate an alternate airport for all supplemental flights except for those conducted in accordance with § 121.623(b) and described in subparagraph 3-1998A.

C. Flag Flights of 6 Hours or Less. Section 121.621 permits certificate holders operating under flag rules to dispatch flights that are no longer than 6 hours in duration without designating an alternate airport. This is allowable if, for 1 hour before to 1 hour after the ETA, weather reports or forecasts, or any combination thereof, indicate the weather will be as follows:

1) The ceiling will be at least 1,500 feet above the lowest circling minimum descent altitude (MDA) if a circling approach is required and authorized for the airport, or

2) The ceiling will be at least 1,500 feet above the lowest published instrument approach minimum or 2,000 feet above the airport elevation, whichever is greater; and

3) The visibility at that airport will be at least 3 miles, or 2 miles more than the lowest applicable visibility minimums, whichever is greater, for the instrument approach procedures (IAP) to be used at the destination airport.

D. Flag Flights of More Than 6 Hours. Section 121.621(a) requires that certificate holders list an alternate airport for all flag flights of more than 6 hours' duration, except those operations described in subparagraph 3-1998A.

E. Listing of Alternate Airports. Sections 121.621 and 121.623 require that certificate holders list each required alternate airport on the dispatch or flight release.

F. Weather Requirements for Designated Alternate Airports. In accordance with § 121.625 weather reports and forecasts, or any combination thereof, must indicate that the weather will be at or above the minimums stated in the certificate holder's OpSpec C055, Alternate Airport IFR Weather Minimums, at the time the aircraft is due to arrive at the alternate airport.

3-1999 REQUIRED FUEL SUPPLY—NONTURBINE AND TURBOPROPELLER-POWERED AIRPLANES. Certificate holders conducting part 121 flag or supplemental operations with reciprocating or turbopropeller-powered airplanes, must comply with the fuel requirements of §§ 121.641 or 121.643 (as applicable to the kind of operation) and the requirements of § 121.647.

A. Fuel Required—Flag and Supplemental Operations. For flag and supplemental operations, the following fuel is required to be onboard the airplane at takeoff:

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1) En Route Fuel. In accordance with §§ 121.641(a)(1) and 121.643(a)(1), each airplane must have enough fuel to fly to and land at the airport to which it was dispatched.

2) Alternate Fuel. In accordance with §§ 121.641(a)(2) and 121.643(a)(2), each airplane must have enough fuel to fly from the destination airport (after an initial or missed approach), to the most distant alternate airport specified in the dispatch or flight release, and land at that airport.

3) Reserve Fuel—Flag Operations and Supplemental Operations Outside the Contiguous United States.

a) International Reserve Fuel. In addition to the fuel required to fly to and land at the destination and alternate airports, §§ 121.641(a)(3) and 121.643(b) require the airplane to have enough fuel to fly for an additional 30 minutes.

b) En Route Reserve Fuel. In addition to the en route fuel, alternate fuel, and the 30 minute international reserve fuel, §§ 121.641(a)(3) and 121.643(b) require the airplane to have enough fuel to fly for 15 percent of the total time required to fly at normal cruising fuel consumption to the destination and alternate airports, or to fly for 90 minutes at normal cruising fuel consumption, whichever is less.

4) Reserve Fuel—Supplemental Operations Within the Contiguous United States.

a) Domestic Fuel Reserve. In accordance with § 121.643(a)(3), for supplemental operations conducted within the contiguous United States, in addition to the en route fuel and alternate fuel, the airplane must have enough fuel to fly for 45 minutes at normal cruising fuel consumption; or

b) Day VFR Operations with Nontransport Category Airplanes Type-Certificated (TC) after December 31, 1964. Each nontransport category airplane TC'd after December 31, 1964 that is operated by a certificate holder who is authorized in its OpSpecs to conduct day VFR operations must have enough fuel to fly for 30 minutes at normal cruising fuel consumption for day VFR operations.

B. Required Contingency Fuel—All Part 121 Operations. In addition to the fuel required by §§ 121.641 and 121.643 (as applicable), § 121.647 requires contingency fuel to be carried onboard the airplane to account for several scenarios. Contingency fuel is required to be onboard the airplane at any phase of flight during which it may be required. Required contingency fuel must be carried in addition to any unusable fuel. Section 121.647 requires the following:

1) Fuel to account for wind and other forecast weather conditions;

2) The fuel necessary to conduct one instrument approach and a possible missed approach.

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3) Fuel for known or anticipated traffic delays; and

4) Fuel for any other conditions that may delay the landing of the aircraft.

NOTE: The certificate holder's General Operations Manual (GOM) should contain policies and instructions to aircraft dispatchers, flight followers, and pilots in command (PIC) for computing the appropriate amount of contingency fuel based on the circumstances likely to be encountered during flight (including taxi).

C. Fuel Required for Flag or Supplemental Flights to Airports for which an Alternate Airport is Not Available within the Fuel Range of the Aircraft. A nonturbine or turbopropeller-powered airplane dispatched or released to an airport for which an alternate airport is not available must have the following fuel onboard:

1) En Route Fuel. In accordance with §§ 121.641(b) and 121.643(c), the airplane must have enough fuel, considering wind and forecast weather conditions, to fly to the destination airport and thereafter to fly for 3 hours at normal cruising fuel consumption.

2) Required Contingency Fuel. The airplane must have fuel onboard to comply with the requirements of § 121.647.

3-2000 REQUIRED FUEL SUPPLY—TURBOJET-POWERED AIRPLANES. Certificate holders conducting part 121 flag and/or supplemental operations with turbojet-powered airplanes, outside of the contiguous United States, must comply with the fuel requirements of §§ 121.645 and 121.647.

A. Fuel Required for Takeoff. Unless otherwise authorized by deviation, § 121.645(b) requires each airplane to have the following fuel onboard at takeoff:

1) En Route Fuel. In accordance with § 121.645(b)(1), each airplane must have enough fuel to fly to and land at the airport to which it was released.

2) Alternate Fuel. In accordance with § 121.645(b)(3), each airplane must have enough fuel to fly from the destination airport (after an initial or missed approach), to the most distant alternate airport specified in the dispatch or flight release, and land at that airport.

3) En Route Reserve. In addition to the fuel required to fly to and land at the destination and alternate airports, § 121.645(b)(2) requires the airplane to have enough fuel to fly for a period of 10 percent of the total time required to fly from the airport of departure to the airport to which it was released and land at that airport.

4) International Reserve Fuel. In addition to the en route fuel, alternate fuel, and the 10 percent en route reserve fuel, § 121.645(b)(4) requires the airplane to have enough fuel to fly for 30 minutes at holding speed at 1,500 feet above the alternate airport, or the destination airport if no alternate is required by § 121.621(a)(2) or 121.623(b). International fuel reserves are computed under standard temperature conditions.

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B. Required Contingency Fuel. In addition to the requirements of § 121.645, § 121.647 requires fuel to be carried onboard the airplane to account for several scenarios. Contingency fuel is required to be onboard the airplane at any phase of flight during which it may be required. Required contingency fuel must be carried in addition to any unusable fuel. Section 121.647 requires the following:

1) Fuel to account for wind and other forecast weather conditions;

2) The fuel necessary to conduct one instrument approach and a possible missed approach;

3) Fuel for known or anticipated traffic delays; and

4) Fuel for any other conditions that may delay the landing of the aircraft.

NOTE: The certificate holder's GOM should contain policies and instructions to aircraft dispatchers, flight followers, and PICs for computing the appropriate amount of contingency based on the circumstances likely to be encountered during flight (including taxi).

C. Fuel Required for Flights for which an Alternate Airport is Not Available within the Fuel Range of the Aircraft. In accordance with § 121.645(c), a turbojet-powered airplane that is released to an airport for which an alternate is not specified under § 121.621(a)(2) or § 121.623(b) must have the following fuel onboard:

1) En Route Fuel. The flight must have enough fuel onboard, considering wind and other weather conditions expected, to fly to the destination airport and thereafter to fly for at least two hours at normal cruising fuel consumption.

2) Required Contingency Fuel. The airplane must have fuel onboard to comply with the requirements of § 121.647.

3-2001 SPECIAL FUEL RESERVES. The FAA Administrator may grant a deviation from § 121.645(b)(2) to certificate holders conducting flag or supplemental operations. The FAA grants the deviation by issuing OpSpec B043, Special Fuel Reserves in International Operations. Inspectors reviewing flights dispatched or released under the provisions of OpSpec B043 should carefully review this paragraph, along with Volume 3, Chapter 18, Section 4, OpSpec B043. POIs should note the method by which, both the en route reserve fuel and the international reserve fuel is computed, along with the special limitations and provisions being imposed. Inspectors should also be aware that § 121.647 applies to all flights conducted under part 121, including those conducted under the provisions of OpSpec B043. For example, if anticipated traffic delays or other anticipated conditions are expected to result in an increase in the amount of fuel planned for the flight, an appropriate quantity of contingency fuel must be added.

A. Computing En Route Reserve Fuel. When a certificate holder dispatches or releases a flight under OpSpec B043, the required en route reserve fuel is not computed for the entire time required to fly from the departure point to the destination. The en route reserve fuel is only applied to that portion of the flight in which the aircraft's position cannot be determined once

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each hour by a Class I International Civil Aviation Organization (ICAO) airways navigational facility. For example, a flight from New York to Frankfurt, Germany takes approximately 7 hours. The flight is conducted over airways by Class I station reference navigation from New York to the point at which the flight departs the standard service volume off the coast of northern Canada. The flight then proceeds by Class II navigation until again reaching the standard service volume of the Class I ICAO airways navigational facility serving the standard entry point of the European airways system. The flight then proceeds over airways by Class I station reference navigation to Frankfurt, Germany. The portion of the flight conducted by Class II navigation is approximately 3 hours.

Table 3-103. Illustration of Operations Specification B043

Operational Analysis

	Part 121, § 121.645		OpSpec B043	
Fuel Increment	Time	Pounds	Time	Pounds
En Route	7:00	126,000	7:00	124,000
En Route Reserve	:42	11,200	:18	4,800
Alternate	:10	2,700	:10	2,700
International Reserve	:30	10,000	:45	12,000
Required Fuel		149,900		143,500

1) Under § 121.645, 42 minutes of en route reserve fuel is required ([7 hours x 60 minutes = 420 minutes] x 10 percent = 42 minutes). For the 7-hour flight, the average fuel burn was 18,000 pounds per hour. At the end of the flight, however, the hourly fuel burn is 16,000 pounds per hour (42 minutes at 16,000 pounds per hour is 11,200 pounds [42/60 x 16,000]). The international reserve fuel is computed at 1,500 feet over the alternate. Since low-altitude holding results in relatively high fuel consumption, for the purpose of this illustration, 20,000 pounds per hour is used. (See Table 3-103, Illustration of Operations Specification B043.)

2) When the same flight is conducted under OpSpec B043, a somewhat smaller fuel load is required. Even though the time en route is equal for both flights, the lower takeoff weight of the OpSpec B043 flight results in a lower en route fuel burn. The en route reserve fuel is 18 minutes ([3 hours x 60 minutes = 180 minutes] x 10 percent = 18 minutes). At 16,000 pounds per hour, 18 minutes is 4,800 pounds [18/60 x 16,000]. The international reserve fuel for the OpSpec B043 flight is 45 minutes at normal cruising fuel consumption (for the weight and altitude at which the flight reaches the alternate); therefore, 45 minutes at 16,000 pounds per hour is 12,000 pounds.

B. OpSpec B043 Special Limitations and Provisions. POIs must ensure that certificate holders conducting operations under the OpSpec B043 authorization comply with each special

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limitation and provision contained in the OpSpec. POIs of part 121 certificate holders must also ensure that OpSpec B043 is not combined with OpSpec B044, Planned Redispatch or Rerelease En Route, since OpSpec B044 provides its own relief from the en route fuel reserves required by § 121.645(b)(2).

3-2002 PLANNED REDISPATCH AND RERELEASE. Section 121.631 permits the redispatch of flights conducted under flag rules and the rerelease of flights conducted under supplemental rules. For the planned redispatch and rerelease of long-range flights conducted under these rules, authorization is required. The means of providing such authorization is through the issuance of OpSpec B044.

NOTE: In accordance with part 121 flag and supplemental rules, the terms "dispatch," "dispatched," "redispatch," and "redispatched" apply to flights operated under flag rules, while the terms "release," "released," "rerelease," and "rereleased" apply to flights operating under supplemental rules.

A. En Route Reserve Fuel. All flights operating in accordance with flag and supplemental rules are required by regulation to carry an en route fuel supply in addition to that needed to get from the origin airport to the destination airport. Section 121.645(b)(2) through (4) requires the additional fuel supply to provide for an aircraft to fly to the most distant alternate airport, if required, and to hold for 30 minutes at holding speed, at 1,500 feet above the alternate airport (or destination airport if no alternate is required), and to fly for a period of "10 percent of the total time required to fly from the airport of departure to, and land at, the airport to which it was released." The fuel requirement based on 10 percent of the total trip time is typically known as the "en route reserve fuel." See Figure 3-108, En Route Fuel Reserves Required by § 121.645(b)(2) for Flight Planned on Straight Dispatch/Release.

1) Long-range flag and supplemental operations typically involve long flight times. The longer the flight time, the greater the opportunity for changes to the conditions en route. This type of changing environment is what necessitated the en route fuel reserves required by § 121.645(b)(2) to be based on total flight time, or a percentage thereof. The longer the flight time, the greater the amount of en route reserve fuel that is required. A flight that is 4 hours in duration would need 24 minutes of reserve fuel (10 percent of 4 hours), while a flight that is 8 hours in duration would need 48 minutes of reserve fuel (10 percent of 8 hours).

2) In most cases, the en route fuel reserve is not actually burned in flight. This fuel is on the aircraft to account for circumstances other than normal. Therefore, if no abnormal events occur, the aircraft will arrive with the en route fuel reserve still onboard. Since the en route fuel reserves are based on a percentage of total trip time, longer flights will arrive at the destination with more fuel than shorter flights due to the carriage of greater en route fuel reserves.

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Figure 3-108. En Route Fuel Reserves Required by § 121.645(b)(2) for Flight Planned on Straight Dispatch/Release

From New York, USA (KJFK) to Rome, Italy (LIRF).

KJFK _____(9 hours) _____LIRF

- Total time en route from KJFK to LIRF is 9 hours. Ten percent of the total trip time is 54 minutes. (Approximately 18,000 pounds of fuel based on a fuel burn of 20,000 pounds/hour.)

B. En Route Reserve Fuel Based on Redispatch/Rerelease. Planned redispatch and rerelease, as authorized by OpSpec B044, allow the en route fuel reserve required by § 121.645(b)(2) to be based on the time it would take to get to an intermediate destination, which is known as the "initial destination."

1) A flight that is conducted utilizing planned redispatch/rerelease is actually dispatched or released to the initial destination and is then redispatched or rereleased from a predetermined point along the route of flight, known as the "redispatch" or "rerelease point," to the airport of intended landing (which is referred to as the "intended destination airport" in the OpSpec). The en route fuel reserves are then based on two time periods:

- The time it takes to get from the origin airport to the initial destination.
- The time it takes to get from the redispatch/rerelease point to the intended destination airport.

2) By breaking up the en route fuel reserves into two sections, based on the time periods above, the fuel needed to operate a flight utilizing planned redispatch/rerelease can be less than the fuel needed to operate a flight based on a straight dispatch or release from origin to destination. This is because a planned redispatch or rerelease assumes that the en route fuel reserves needed to get from the origin airport to the initial destination are not going to be used. Therefore, when the aircraft gets to the redispatch/rerelease point, which is typically just before or even abeam the initial destination, the unused en route reserve fuel can be used in the fuel calculation to complete the flight from the redispatch/rerelease point to the intended destination. See Figure 3-108A, En Route Fuel Reserves Required by § 121.645(b)(2) for Flight Planned Utilizing Planned Redispatch/Rerelease.

3) Since the total fuel required for the departure for an aircraft operating a flight utilizing redispatch/rerelease would be less than it would be if the flight were conducted without one, the takeoff gross weight of that aircraft will be reduced, which can also allow for additional payload to be carried.

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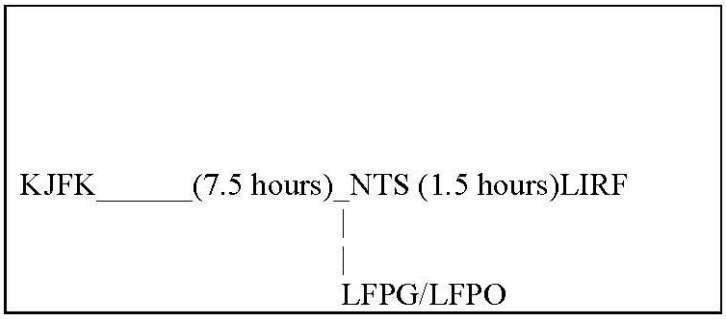
Figure 3-108A. En Route Fuel Reserves Required by § 121.645(b)(2) for Flight Planned Utilizing Planned Redispatch/Rerelease

The flight is planned from KJFK to Paris, France (LFPG) with an Alternate of Orly (LFPO) and a redispatch/rerelease from point NTS, which is a waypoint along the flight planned route, to LIRF.



- Total time en route from KJFK to LFPG is 7.5 hours. Ten percent of the total trip time is 45 minutes. (Approximately 15,000 pounds of fuel based on a fuel burn of 20,000 pounds/hour.)
- Total time en route from the redispatch/rerelease point, NTS to LIRF, is 1.5 hours. Ten percent of this time is 9 minutes. (Approximately 3,000 pounds based on 20,000 pounds/hour fuel burn.)
- If the 10 percent en route fuel reserve needed to get to NTS is not used up until that point, it can then be used as the en route fuel reserve needed to get from NTS to the intended destination of LIRF. Based on this principle, a flight is able to reach its intended destination of LIRF by carrying only the en route fuel reserves required to get to LFPG.
- If at the point of redispatch/rerelease (NTS) the flight has burned some of the en route fuel reserves due to circumstances such as fuel over-burn, weather reroutes, or excessive vectoring by air traffic control (ATC), there may not be enough en route fuel reserves onboard to meet the minimum fuel requirements of the redispatch/rerelease. In this case, continuation to the intended destination may not be possible and the flight would then need to land at the initial destination airport or alternate airport.

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C. Fuel Requirements of Part 121. Before a flight can be released from the departure point to the initial destination airport, all the fuel and weather requirements of part 121 subpart U and the performance requirements of part 121 subpart I must be met. Those same requirements have to be met for the redispatch or rerelease from the planned redispatch/rerelease point to the actual destination as well. The dispatch/release to the initial destination and the redispatch/rerelease to the intended destination are treated as separate, individual flight segments. Each flight segment requires its own dispatch or flight release. All of the fuel and weather requirements of part 121 subpart U and the performance requirements of part 121 subpart I apply to both flight segments and, therefore, both releases. In addition, the fuel requirements of § 121.647 must also be considered when determining the required fuel for dispatch/release to the initial destination airport as well as for the redispatch/rerelease to the intended destination airport.

D. Flight Planning.

1) Process Steps. In order to plan a redispatch or rerelease, the following basic steps must be accomplished:

a) An initial destination and an alternate for that destination, if required by § 121.621 or § 121.623, must be selected. For flag operations, airports utilized as an initial or intended destination must be listed as a regular, provisional, or refueling airport in the certificate holder's OpSpec C070, Airports Authorized for Scheduled Operations.

b) A route of flight from origin to intended destination must be selected.

c) Then, a point along the route of flight that is common to the initial and intended destination airports must be selected as the point at which the redispatch or rerelease will occur. This point is typically located closest to the initial destination.

2) Additional Considerations. Once the airports and route of flight have been selected, items such as weather along the route, Notices to Airmen (NOTAM), and the applicability of weather minimums from the origin airport to the initial destination airport and from the redispatch/rerelease point to the intended destination airport must be considered.

3) Performance Limitations.

a) The flight must be planned so that the aircraft is not too heavy to land at the initial destination or alternate airports, or the intended destination or alternate airports, in accordance with the performance limitations contained in §§ 121.185, 121.187, 121.195, and 121.197, as applicable.

b) Circumstances may warrant an initial destination to be located at such a distance that the landing weight at that airport would be in excess of the weight set forth by these regulations, as well as the limitations set forth by the AFM, if the aircraft were to fly directly there and land. In order to prevent this condition, a redispatch/rerelease point may have to be chosen at a distance that would allow an aircraft to fly far enough to be able to land at the initial destination within regulatory and AFM limitations. This means that in some cases, the redispatch/rerelease point may have to be located at a point beyond the initial destination rather

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than ahead or abeam of it to allow the aircraft to fly past the initial destination and burn enough fuel to ensure landing within regulatory and AFM limitations.

E. Operational Reanalysis and the Redispatch/Rerelease Message. Once the flight is en route, conditions such as weather, winds aloft, and fuel burn are reevaluated by a dispatcher for flights conducted under flag rules or by a person authorized to exercise operational control for flights conducted under supplemental rules. Specifically, OpSpec B044 requires that a new operational analysis must be conducted within 2 hours prior to the flight's arrival at the planned redispatch or rerelease point.

1) In preparing the new operational analysis, the dispatcher or person designated to exercise operational control (other than the PIC) must:

a) Conduct an updated fuel (operational) analysis based on the current route of flight, wind conditions, and aircraft weight, on the route from the planned redispatch or rerelease point to the intended destination airport, and any required alternate airports; and

b) Inform the PIC of the results of the updated operational fuel analysis and all current information concerning weather conditions, navigation and ground facilities, known air traffic delays, and services at the intended destination and alternate airports specified in the redispatch or rerelease, as required by § 121.601(c) for flag operations or § 121.603(b) for supplemental operations.

2) If the operation indicates that there is sufficient fuel onboard to complete the redispatch or rerelease to the intended destination, the dispatcher or person designated to exercise operational control (other than the PIC) must issue a dispatch or flight release from the planned redispatch or rerelease point to the intended destination airport.

3) While a flight is en route, the new dispatch or flight release is typically provided in a message, known as the redispatch or rerelease message, which is transmitted to the PIC either verbally by voice communication or via a messaging system, such as the Aircraft Communications Addressing and Reporting System (ACARS).

4) One of the conditions of OpSpec B044 requires the dispatcher or person authorized to exercise operational control to record the redispatch or rerelease by listing their name and the time of redispatch or rerelease in the redispatch/rerelease message. In other words, the record of the redispatch or rerelease is part of the release itself.

5) Once the PIC receives the message, he or she must review the information and determine if concurrence to continue to the intended destination airport is warranted. If the PIC determines that safe continuation can be made, he or she will specifically accept the planned redispatch or rerelease and proceed to the intended destination. OpSpec B044 requires that the PIC's decision be recorded as part of the redispatch or rerelease. OpSpec B044 also requires the redispatch/rerelease to be retained for at least 3 months in accordance with § 121.695 or § 121.697, as applicable. PICs often provide their concurrence to the dispatcher or person authorized to exercise operational control through ACARS. POIs must ensure that all of the

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elements of the redispatch or rerelease, as required by OpSpec B044, are retained by the certificate holder through their FAA-approved method of recordkeeping.

6) If the PIC or dispatcher determines that the current conditions do not allow for safe continuation to the intended destination, then the flight must land at the initial destination or alternate, as appropriate.

NOTE: It is important that POIs and certificate holders understand that a flight is not initially released to the intended destination airport. Subparagraph b2)a) of OpSpec B044 specifically states that the flight will be released to the initial destination. In order to continue to the intended destination airport, the flight will specifically have to be redispatched or rereleased based on the operational reanalysis required by subparagraphs b(4) and b(5)(a)–(f) of OpSpec B044.

NOTE: Section 121.122 does not specify communication requirements for certificate holders conducting all-cargo supplemental operations. However, OpSpec B044 specifically requires communication between the PIC and the person authorized to exercise operational control. Therefore, a certificate holder conducting all-cargo supplemental operations must ensure that a two-way radio communications system or other means of communication approved by the FAA is available for all flights being conducted under the authorizations contained in OpSpec B044.

NOTE: Section 121.631(f) allows a destination or alternate airport to be changed as long the airport is authorized for that type of aircraft and all of the appropriate requirements of §§ 121.173 and 121.593 through 121.661 are met at the time of redispatch/rerelease or amendment to the release. Therefore, if conditions do not allow for safe continuation to the intended destination, initial destination, and/or alternate, a flight can be redispatched or rereleased to another airport as long as the requirements of § 121.631(f) and (g) are met.

F. Loss of Communication. In the event of a total loss of communication en route:

1) OpSpec B044 requires the PIC to follow the lost communications procedures, as outlined in the Aeronautical Information Manual (AIM), or the provisions specified in ICAO Annex 2, as applicable to the airspace in which communication is lost.

2) OpSpec B044 requires that the aircraft dispatcher or persons designated to exercise operational control follow the emergency procedures set forth in § 121.557(b) and (c) for flag operations, and § 121.559(b) and (c) for supplemental operations.

G. Conditions and Limitations. OpSpec B044 contains 11 specific conditions and limitations that must be complied with in order for a redispatch or rerelease, as described in this section, to be safely accomplished in accordance with all applicable Federal aviation regulations. See the OpSpec B044 job aid contained in the Web-based Operations Safety System (WebOPSS) for detailed information regarding each condition and limitation. In addition, Volume 3, Chapter 18, Section 4, contains a list of each of the conditions and limitations, as well as information for POIs on how to issue OpSpec B044.

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H. Certificate Holder En Route Fuel Monitoring Procedures. In accordance with OpSpec B044, POIs must ensure that the certificate holder develops en route fuel monitoring procedures for monitoring, analyzing, and responding to a fuel over-burn (when the actual fuel burn exceeds the fuel planned) during the en route phase of a flight. POIs should review the certificate holder's procedures and ensure that they contain at least the following:

1) Policies and Procedures. A certificate holder's policies and procedures for en route fuel monitoring should include at least the following:

a) A description of the certificate holder's method of monitoring fuel for each fight operated in accordance with OpSpec B044 for the purpose of verifying the accuracy of flight plan fuel burn.

b) The certificate holder's method of analyzing when actual fuel burn exceeds the fuel planned.

c) A description of the actions the certificate holder will take in the event that the actual flight plan fuel burn is greater than that planned for a given flight.

d) The certificate holder's definition and/or description of what is considered to be minimum fuel for the purpose of accepting a planned redispatch or rerelease.

e) A method of tracking flights that land at an airport other than the intended destination during redispatch/rerelease operations.

2) Responsibility and Authority.

a) POIs must ensure that certificate holders designate and document the persons with the responsibility and authority to implement, maintain, and improve the en route fuel monitoring process.

b) Certificate holders are responsible for ensuring that the persons involved in the en route fuel monitoring process have the knowledge and skills to exercise their responsibilities.

I. Training. POIs must ensure that certificate holders conducting planned redispatch/rerelease flight operations have information and instructions for flightcrew members, dispatchers (flag operations), or persons designated to exercise operational control (supplemental operations) regarding the use and application of OpSpec B044 contained in their FAA-approved training program. The training program should include instruction in at least the following areas:

1) Specific instruction on each of the conditions and limitations contained in OpSpec B044.

2) The certificate holder's flight planning system, including the method(s) of calculating/computing redispatch/rerelease flight plans and operational reanalysis.

3) Selection of routes and initial destination and alternate airports.

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4) Fuel planning, including minimum fuel requirements for initial dispatch/release and redispatch/rerelease.

5) Criteria for determining minimum fuel for acceptance of redispatch/rerelease.

RESERVED. Paragraphs 3-2003 through 3-2020.

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VOLUME 3 GENERAL TECHNICAL ADMINISTRATION

CHAPTER 44 ASSESS CONTINUING ANALYSIS AND SURVEILLANCE SYSTEM FOR PARTS 121 AND 135

Section 1 Safety Assurance System: Evaluating an Air Carrier's Continuing Analysis and Surveillance System

3-3891 REPORTING SYSTEM. Use Safety Assurance System (SAS) automation. This section is related to SAS Element 1.1.3 (AW), Continuing Analysis and Surveillance System (CASS).

3-3892 OBJECTIVE. This section provides guidance and information on the design, implementation, functions, and other considerations of an air carrier's CASS.

3-3893 GENERAL.

A. Regulatory Requirements. Title 14 of the Code of Federal Regulations (14 CFR) part 121, § 121.373 and part 135, § 135.431 require an air carrier operating under part 121 or 135 to establish and maintain a CASS. These sections also allow the Federal Aviation Administration (FAA) to require revisions to an operator's maintenance program based on deficiencies or irregularities revealed by the CASS.

B. Background.

1) The FAA implemented the regulatory requirement for a CASS in 1964 in response to safety concerns and discoveries of systemic weaknesses in the maintenance programs of some air carriers. We identified these concerns during accident investigations and FAA surveillance activities accomplished during the 1950s. The FAA introduced the CASS as an element of a Continuous Airworthiness Program in a 1964 rulemaking that contained other elements such as a manual, an adequate maintenance organization, a maintenance recordkeeping system, Required Inspection Items (RII), and more.

2) There is a requirement for a CASS for air carriers operating under part 121 and § 135.411(a)(2) applicability. CASS utilizes a systems-based approach, which permits an air carrier to identify and understand maintenance program deficiencies well enough to develop and implement permanent solutions for those discrepancies. CASS is a keystone of an air carrier's ability to produce Airworthy aircraft on a consistent basis.

C. Definitions.

1) Audit. Scheduled or unscheduled formal reviews and verifications to evaluate compliance with policy, standards, and/or contractual requirements.

2) Authority. The power to design or change fundamental policy or procedures without having to seek a higher level management approval. Authority is a permission; it is a right coupled with an autonomous power to accomplish certain acts or order others to act.

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Often, one person grants another authority to act as an employer to an employee, a corporation to its officers, or as a governmental empowerment to perform certain functions.

3) Carried Out by the Certificate Holder or Other Person. The certificate holder must maintain operational control over maintenance that any person performs on its aircraft. Operational control includes independently determining the scope and type of maintenance that may be required, when to accomplish that maintenance, and if the maintenance was done in accordance with its manual and program, regardless of who accomplished the maintenance.

4) CASS. The elements of the system are always working. For example, continuing surveillance means someone is always looking and collecting information. Continuing analysis means that someone is always analyzing the information that is always being collected.

5) Corrective Action. An action designed to eliminate or mitigate a deficiency that has been identified within the air carrier's maintenance program.

6) Deficiency. A condition which is insufficient or incomplete or where something required is lacking. In a CASS, it is something that is missing from the air carrier maintenance program that should be there, or it is something that is there but not producing the desired results. Alternatively, it could indicate that the maintenance program documentation is not being followed. For example, a program element that has failed and is not working or a program element that has faults and is not working as it should are deficiencies.

7) Effective. Producing or capable of producing a desired result. The maintenance program is producing the desired results when the following objectives are realized:

- Airworthy aircraft that have been properly maintained for operations in air transportation;
- Competent personnel;
- Adequate facilities and equipment; and
- All maintenance, preventive maintenance, and alterations are always performed in accordance with the certificate holder's maintenance program and manual.

8) Establish and Maintain. "To establish" means that the air carrier develops a CASS that is appropriate for the type and scope of its operation. "To maintain" means that the air carrier keeps its CASS current and appropriate in response to changes in the type and scope of its operation.

9) Maintenance Program. The programs outlined in §§ 121.367 and 135.425, other sections of part 121 subpart L, part 135 subpart J, and described in some detail in the current edition of Advisory Circular (AC) 120-16, Air Carrier Maintenance Programs.

10) Maintenance. Inspection, overhaul, repair, preservation, and the replacement of parts, excluding preventive maintenance.

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11) Performance. The act of doing something successfully; the successful execution of an action. In the CASS, performance means that the maintenance program is being accomplished or executed as outlined in the air carrier manual.

12) Person. An individual, firm, partnership, corporation, company, association, joint stock association, or governmental entity. It includes a trustee, receiver, assignee, or similar representative of any of them.

13) Preventive Action. Action to eliminate or mitigate the cause or reduce the effects of potential nonconformity or another undesirable situation.

14) Program. An organized list of procedures.

15) Responsibility. The obligation to ensure that a task or function is successfully carried out. Responsibility includes accounting for actions related to the task or function. This is a key attribute of operational control.

16) Risk. Risk is the degree of probability that hurt, injury, or loss will occur over a specific period of time or number of operational cycles. Risk has two elements: severity and likelihood. With regard to air carrier maintenance operations standards, the relationship between these two elements must be inverse.

a) Severity. The type of harm that will be inflicted if a particular event occurs. For air carrier maintenance programs, severity should be expressed in qualitative terms as a consequence of failure: safety, operational, economic, or environmental.

b) Likelihood. The estimated probability or frequency, in quantitative or qualitative terms, of an occurrence related to the hazard; an expression of the probability that a specific unsafe event will occur.

17) Risk Mitigation. A risk control measure. It refers to the process of modifying the system in order to reduce the risk.

18) Risk Management (RM). A formal process composed of identifying hazards, analyzing risk, assessing risk, and controlling risk. This process is embedded within the processes used to provide the product/service; it is not a separate process.

19) Root Cause Analysis (RCA). The analysis of deficiencies to determine their underlying root cause.

20) System. A functionally related group of elements. In the CASS, the elements are:

- Surveillance;
- Analysis;
- Corrective action; and
- Followup.

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3-3894 OVERVIEW OF A CASS.

A. Functions of the CASS. CASS functions as an air carrier maintenance program management tool that includes continuous and methodical monitoring and evaluation of an air carrier maintenance program. An air carrier's CASS uses a continuous, system-safety-based, closed-loop cycle of surveillance, data collection and analysis, corrective action, and followup to continually evaluate the performance and effectiveness of the maintenance program. Through the CASS, the air carrier ensures that it is performing the right maintenance at the right time and that it produces the intended results. The CASS is one of the tools an air carrier uses to exercise operational control over maintenance activities conducted on its aircraft.

NOTE: We cannot overstate that the CASS is a system and not a program. The primary responsibility for the CASS should be specific to an individual with the necessary authority, while coordination for the implementation of a CASS might be entrusted to a department.

1) CASS Monitors Maintenance Program Performance. The program performance (program execution) part of the CASS ensures that everyone, including all of the air carrier's maintenance providers, comply with the air carrier's manual and program and with all applicable regulations.

a) Generally, the program execution part of the CASS functions through a system of audits and investigations of operational events. The air carrier should consider each negative audit and each operational event as an indicator or symptom of a program or systemic failure. The air carrier should evaluate each one. However, depending on the results of the evaluation (risk analysis and risk assessment), every symptom or indicator may not require corrective action.

b) The program execution part of CASS should include a continuous cycle of both scheduled and unscheduled (proactive and reactive) surveillance and investigations, data collection and analysis, corrective action, and followup surveillance.

2) CASS Monitors Maintenance Program Effectiveness. The program effectiveness part of a CASS ensures that the maintenance program is producing the desired results. Primary indicators of the level of maintenance program effectiveness are the level of unscheduled maintenance and the rate of availability of the aircraft for use in air transportation.

a) Generally, the program effectiveness part of the CASS functions through a system of data collection and analysis of operational data that results from operation of the aircraft. An operator should collect operational data and equipment failure data, which measures the output (results) of the maintenance program.

b) Since one of the primary objectives of a maintenance program is to produce Airworthy aircraft for operations in air transportation, data sets such as the rate of aircraft availability, the rate of unscheduled landings, and the rate of schedule and dispatch reliability are useful for this purpose. An operator can collect this data in relation to a particular aircraft or a particular fleet.

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c) While the FAA does not mandate the specific data an operator should collect, the FAA does expect an operator to have an effective process designed to select appropriate, relevant, and useful types of collected data. This data selection process should also ensure that any data collected is useful for its intended purpose. Moreover, a periodic review of the type of collected data ensures that the collected data remains appropriate, relevant, and useful.

B. How CASS Does It. The CASS enables an air carrier to detect and correct discrepancies in all elements of its maintenance program by proactively looking for indicators and symptoms of deficiencies and reactively looking at the results of deficiencies. CASS monitors maintenance program performance and effectiveness through a systems approach using a closed-loop system of four major activities:

- Surveillance;
- Data analysis;
- Corrective action; and
- Followup.

C. CASS Surveillance and Analysis. The regulations require that a CASS accomplish surveillance and analysis of the air carrier maintenance program from two perspectives: performance and effectiveness. An air carrier conducts the first two activities in the CASS (surveillance and analysis) in two different ways. The primary basis for one activity is audits, while the primary basis for the other is operational data collection and analysis. The results of these two types of surveillance and analysis feed into the third and fourth basic CASS activities (corrective action and followup). Table 3-124, The Major Continuing Analysis and Surveillance System Activities, summarizes the flow of the four basic activities of a CASS.

Table 3-124. The Major Continuing Analysis and Surveillance System Activities

VERIFY PERFORMANCE OF THE MAINTENANCE PROGRAM	VERIFY EFFECTIVENESS OF THE MAINTENANCE PROGRAM
1. Surveillance: Audit process. • Create a risk-based audit plan. • Perform work-in-progress audits. • Perform transaction audits. • Perform system audits. • Identify hazards.	**1. Surveillance:** Data collection process. • Select data sets. • Collect operational data. • Collect failure data. • Identify trends, anomalies, and potential hazards.
2. Analysis: Identify hazards, accomplish risk analysis and assessment.	**2. Analysis:** Identify hazards, investigate adverse indicators, and accomplish risk analysis and assessment.
3. Corrective Action: Accomplish an RCA, and develop, implement, and monitor a corrective action plan (CAP), as appropriate.	
4. Followup: Verify that the corrective action was effective and initiate risk-based followup surveillance planning, as appropriate.	

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1) Surveillance. The air carrier conducts surveillance so it can gather information and collect data for use in the evaluation of all elements of its program (including its maintenance providers) from two different perspectives: performance and effectiveness.

a) Surveillance to verify performance involves the use of audits, specifically work-in-progress audits used to make sure the manual and program are being followed.

b) Surveillance to verify effectiveness involves the collection of operational data and aircraft systems failure data so that the air carrier can make conclusions about the degree of effectiveness of the maintenance program.

2) Analysis of Data. Data analysis is the identification of system deficiencies (hazards) in an air carrier's maintenance program through analysis of the various kinds of data that the air carrier has chosen to collect. Data analysis is also used to verify an acceptable level of program performance or effectiveness.

a) The performance (program execution) analysis function of the CASS is carried out through the analysis of data collected during the accomplishment of audits and investigations. These audits and investigations examine the actual accomplishment of the activities and tasks of a maintenance program element relative to the standard (i.e., the air carrier manual and the maintenance program). The accomplishment of audits and analysis of audit data serve to measure program execution.

b) The effectiveness (intended results produced) analysis function of the CASS is carried out through the analysis of collected operational data. Collection and analysis of operational data allows the air carrier to measure the output of the maintenance program relative to its objectives.

3) Corrective Action. CASS identifies deficiencies through analysis of the audit and operational data that it collects. However, based on the risk assessment performed during risk analysis, not all deficiencies will require corrective action. The level of risk might be of an acceptable level. For example, a number of mechanical delays or cancellations may be acceptable in the eyes of the air carrier. This can be acceptable as long as safety is not compromised.

a) When a CASS determines a risk to be of an unacceptable level, it will employ risk controls (corrective action) to deal with an identified deficiency and the cause(s) of that discrepancy.

b) When a CASS requires the development of a CAP, it will address the causal factor(s) and provide a solution to prevent recurrence. Within a CASS, an RCA is used to identify the central causes of an event and facilitate effective corrective actions. A CASS will implement and monitor the plan through completion.

4) Followup. Followup is the very important function that ensures the corrective action has addressed the deficiency. The followup ensures that the corrective action accomplishes what the air carrier intended it to do and connects the closed loop back to

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surveillance. Based on the assessment of risk, the air carrier can perform additional surveillance and/or modify data collection processes.

D. RM in CASS.

1) In concert with the attributes of a good organization, personnel, and resources for a CASS should be prioritized as part of the overall risk management process (RMP). RM facilitates the balancing act between assessed risks and practical risk mitigation.

2) RM serves to focus safety efforts on those hazards posing the greatest risks. Essentially, any methodology used to prioritize surveillance personnel and resources (as well as to formulate corrective action decisions later in the process) involves principles of RM.

3) The following elements compose a formal RMP:

- Identifying hazards;
- Analyzing risk;
- Assessing risk; and
- Controlling risk.

NOTE: The flowchart in Figure 3-131B, Overview of the Risk Management Process, summarizes an overview of the RMP. The elements of an RMP encompass the four major CASS activities (Table 3-124). You can find a detailed description of the RMP in paragraph 3-3898.

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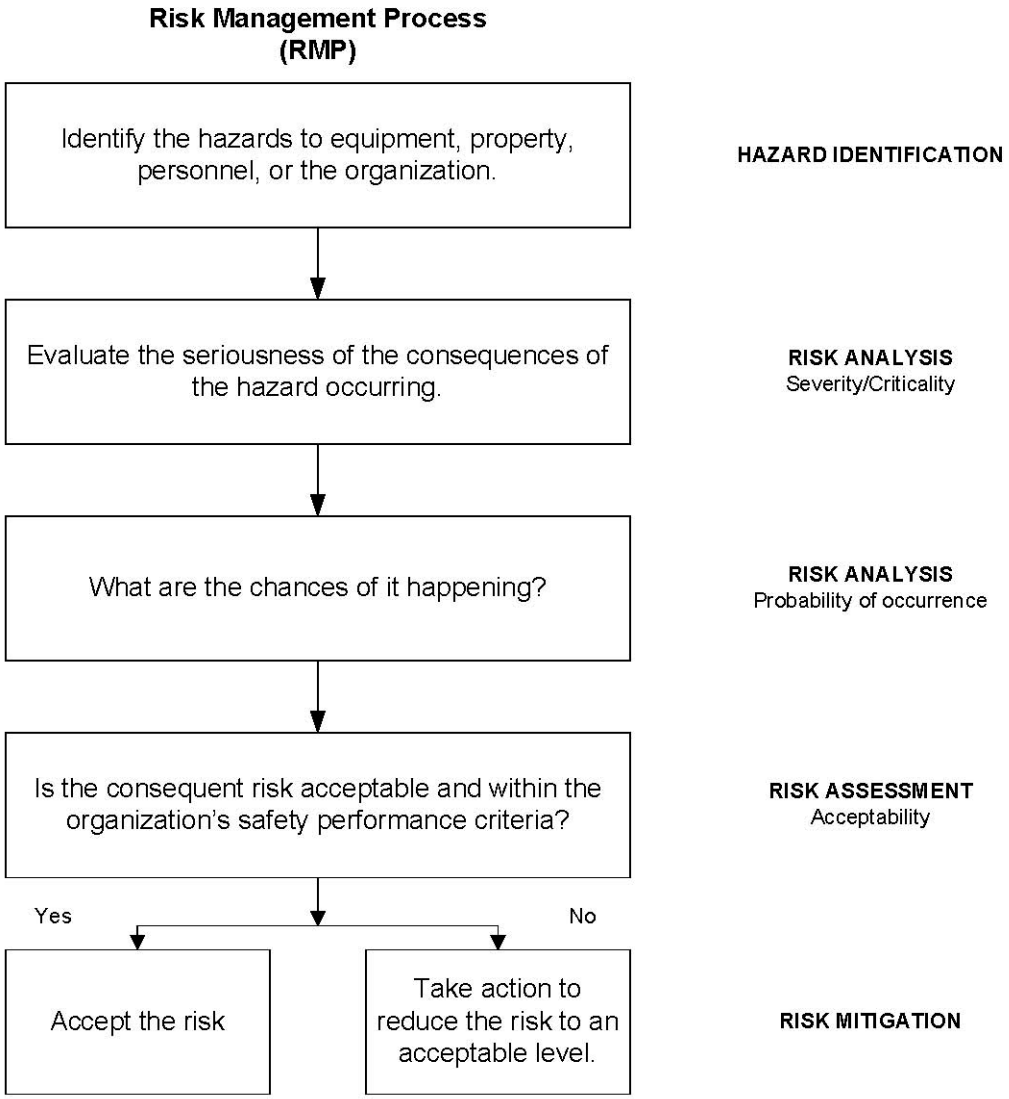
Figure 3-131B. Overview of the Risk Management Process



E. CASS in an Air Carrier's Operation. An air carrier should tailor its CASS to its individual operation. Therefore, to a large degree, what the CASS looks like will depend on the design of the maintenance organization and the size, complexity, and level of flight operations of that air carrier.

1) The basic CASS functions are always the same, but the personnel who carry out each function and the manner in which the functions are carried out will be different from one air carrier to another. For example, an air carrier with a high level of daily aircraft utilization and a very large fleet of many different kinds of aircraft may have a separate department dedicated to performing CASS activities. On the other hand, an air carrier with a fleet of 25 aircraft, operating seasonally or weekly, may find it more efficient to use its quality assurance (QA) department to perform CASS activities. An on-demand operator with few employees and one or two aircraft

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having an average annual utilization of less than 1,000 hours may contract most of its CASS activities.

2) Regardless of the air carrier's size and level of flight operations, a well-structured CASS helps an air carrier exercise operational control over maintenance activities. This involves taking a systems approach to enhancing safety and eliminating deficiencies as well as systematically determining the level of performance and effectiveness of its maintenance program. This is a key to achieving operations with the highest possible degree of safety as well as a very high degree of efficiency.

F. What CASS Examines. A CASS monitors all 10 elements of the air carrier's maintenance program. A CASS accounts for the consequences of various internal and external influences on the maintenance program. The following are examples of some, but not all, of the items within each element that a CASS looks at. You should note that all of these items are examined by the surveillance of the maintenance program performance function of CASS; this is accomplished through audits. However, in addition to real-time events such as accidents/incidents, CASS will address effectiveness discrepancies identified through the collection and analysis of operational data (i.e., RCA).

1) Airworthiness Responsibility.

a) Air carriers are primarily responsible for the performance of maintenance, including work done by maintenance providers on their aircraft. All maintenance, including work done by outside persons, must be done in accordance with the air carrier's maintenance program and maintenance manual.

b) An air carrier certificate makes the certificate holder a maintenance entity. Each person who accomplishes maintenance on a certificate holder's aircraft accomplishes it on the behalf of the certificate holder as an agent for the certificate holder. Consistent with the privileges and limitations of its air carrier certificate, air carriers, through their maintenance organization, are responsible for executing operational control over maintenance activities that anyone accomplishes on its aircraft. It is a requirement for air carriers to determine when maintenance is required, what maintenance is required, accomplishing the maintenance, determining if the maintenance was done satisfactorily, and approving its aircraft for return to service. Consistent with the regulations, an air carrier certificate holder may not delegate this responsibility to persons used by the certificate holder for any maintenance, preventive maintenance, or alterations.

2) Maintenance Manuals. CASS ensures that:

a) The content of all manuals, including maintenance manuals and technical content, is the responsibility of the air carrier. The basis of the manuals may be the Original Equipment Manufacturer (OEM) manuals or other information, but it is a requirement for the air carrier to use its own manual, not the OEM manuals.

b) Manuals, publications, and forms are useable, current, correct, and readily available to all personnel required to use them.

c) Each person required to comply with the air carrier's manual has access to it during the performance of normal duties.

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3) Maintenance Organization.

a) Consistent with the responsibility described above, air carriers must have a maintenance organization that is able to effectively exercise and maintain operational control over all persons performing, supervising, managing, and amending the maintenance program. The maintenance organization must be able to manage and guide its maintenance personnel and provide the direction necessary to achieve overall maintenance program objectives.

b) The individual with overall maintenance program authority and responsibility is the Director of Maintenance (DOM), who functions as the accountable manager for the maintenance program. The organization must clearly identify this individual within the organization and the individual must be qualified in accordance with 14 CFR part 119, §§ 119.65 and 119.67(c) or §§ 119.69 and 119.71(e), as appropriate. While retaining overall authority and responsibility, the accountable manager may delegate direct responsibility for elements of the program as appropriate for the size and structure of the maintenance organization.

c) The air carrier manual must contain a chart or a description of the maintenance organization showing clear authority and responsibility, including delegated responsibility, for the overall maintenance program and all of its elements and functions. The regulations require the air carrier to include a description in its maintenance manual of the duties and responsibilities for each position in the organization so that there is not a fragmented organizational system with high risk of confusion over who is responsible for a given task.

d) In order to be effective, an adequate maintenance organization must be able to demonstrate the following four organizational duties:

1. The duty to define the environment within which individuals conduct their tasks.

2. The duty to define the policies and procedures that individuals must follow and respect.

3. The duty to allocate the resources that individuals need in order to achieve safety and production goals.

4. The duty to investigate system failures and take all needed remedial action to avoid a repetition.

e) A maintenance organization will not be successful if it permits the following failures to occur.

1. Failure to understand the effect of people on safety and reliability of aircraft maintenance operations.

2. Failure to organize its employees’ work.

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3. Failure to monitor its employees' work effectively.

4. Failure to implement corrective actions.

f) The performance of the RII function(s) must be organizationally separated from the performance of the other maintenance (including inspection), preventive maintenance, and alteration functions. This organizational separation must be below the level of the individual who has primary responsibility for the RII function, other maintenance, preventive maintenance, and alterations functions. In simple terms, this means that the part of the maintenance organization that accomplishes the maintenance (including inspection), preventive maintenance, and alterations function cannot be the same part of the maintenance organization that accomplishes your RII function.

4) Maintenance Schedule. The maintenance schedule sets out the appropriate item, task, and interval of the air carrier's scheduled maintenance effort. The FAA expects the air carrier's maintenance schedule to be task based and appropriately modified in accordance with the CASS data collection and analysis findings. The air carrier accomplishes the initial selection and the continuous validation of each scheduled maintenance task and its associated interval according to well-defined criteria throughout the service life of the item, system, or structure. The maintenance schedule is proactive and designed to permit the item, system, or structure to do what it is designed to do. Notwithstanding design issues, the level of unscheduled maintenance is a primary indicator of the level of effectiveness of the maintenance schedule.

5) RIIs.

a) The air carrier has specific procedures, standards, and limits necessary for the acceptance or rejection of each RII and for periodic inspection and calibration of precision tools, measuring devices, and test equipment. You should note that the OEM's manuals and procedures do not contain RII procedures, standards, and limits as the air carrier must develop and document these.

b) Personnel authorized to accomplish RII inspections receive proper training and qualification for each RII task that they receive the authorization to perform.

c) Designated RII inspectors who perform an item of work do not perform the required inspection on that item.

d) The maintenance organization separates the performance of the required inspection functions from the other maintenance, preventive maintenance, and alteration functions.

e) The manual contains procedures to ensure that only supervisory personnel of an inspection unit, or the person who has overall responsibility for the RII function as well as the other maintenance, preventive maintenance, alteration functions, may countermand the decision of any RII inspector regarding an RII.

6) Contract Maintenance. Vendors and suppliers have the qualifications and provide services and products according to the air carrier's maintenance program and manual.

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There should be no difference between the way work is done by air carrier personnel or by the air carrier's maintenance providers.

7) Personnel Training.

a) The air carrier must have a means to determine that all maintenance personnel, including maintenance provider personnel, are competent to accomplish their duties.

b) The air carrier has a training program for personnel (including inspection personnel and maintenance provider personnel) that determine the adequacy of accomplished maintenance.

c) The program ensures that personnel are competent to perform their duties.

8) Accomplishment and Approval of Maintenance.

a) Maintenance facilities and equipment, as well as the air carrier's maintenance providers' facilities and equipment, are adequate to perform the maintenance. Other than scope and location, there should be no difference in the standards for facilities and equipment between the air carrier and its maintenance providers.

b) Maintenance providers properly store, dispense, identify, and handle parts and components.

c) Maintenance providers properly calibrate tools and equipment.

d) Maintenance providers identify the requirements for specialized tools or training and provide training.

e) Maintenance providers perform maintenance and alterations according to methods, standards, and techniques specified in the air carrier's manuals.

f) Maintenance provider personnel properly document work interruptions and deferred maintenance in shift turnover records, and accomplish them according to applicable procedures.

g) Maintenance providers properly classify major repairs and major alterations (consistent with the 14 CFR part 1, § 1.1 meaning of major alteration or repair) and accomplish them in accordance with FAA-approved technical data.

NOTE: During 1953, the Civil Aeronautics Administration (CAA) published a list of repairs to specific parts as well as specific types of repairs that were considered major repairs in Civil Aeronautics Manual (CAM) 18. This major repair list was later adopted, unchanged, as part of 14 CFR part 43, appendix A.

h) If the air carrier relies exclusively on this standardized list of major repairs to make the major/minor classification, it will result in the classification of some minor repairs as major and the classification of some major repairs as minor simply because the list has not been

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updated to include evolving airplane design and construction techniques such as composite structures, damage-tolerant design, and the high-speed pressurized jet transport that did not exist in 1953.

i) Appropriately certified mechanics or repairmen, who are authorized by the air carrier, execute log entries and Airworthiness Release Forms.

j) Maintenance providers complete log entries and Airworthiness Release Forms according to the air carrier's written policies and procedures.

9) Maintenance Recordkeeping System.

a) Generate and retain maintenance records and current status records in accordance with the air carrier's manual procedures.

b) Maintenance records and current status records are complete and correct.

c) Airworthiness Directives (AD) are appropriately evaluated, accomplished, and tracked.

d) Identify life-limited parts and track the current time in service status.

10) CASS.

a) CASS has four major activities that ensure, with a system-oriented, structured approach, that all elements of the air carrier maintenance program are properly executed and are consistently effective by design rather than by chance.

b) Senior management reviews CASS issues on a regularly scheduled basis. Meetings of CASS or maintenance management committees or boards are also held on a regular basis to discuss findings, analysis, and the progress of corrective actions. These meetings may address events, as well as statistical data and trends.

3-3895 PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. Knowledge of the requirements of parts 119, 121, and/or 135.

B. Coordination. This task may require coordination between the principal maintenance inspector (PMI) and the principal avionics inspector (PAI).

3-3896 REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions):

- AC 120-16, Air Carrier Maintenance Programs.
- AC 120-79, Developing and Implementing an Air Carrier Continuous Analysis and Surveillance System.
- AC 120-92, Safety Management Systems for Aviation Service Providers.

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- FAA Order 8000.369, Safety Management System.
- FAA Order 8040.4, Safety Risk Management Policy.

B. Forms. None.

C. Job Aids. None.

3-3897 VERIFY THE CASS ORGANIZATIONAL STRUCTURE.

A. Identifying CASS Organization Positions. Identify the positions within the company that have authority and responsibility for the CASS. The definitions below have meaning within the context of an air carrier's organization. Consistent with existing regulations, there should be a chart or description of the CASS organization in the air carrier's manual.

1) Authority is a permission; it is the power to create or modify fundamental policy or procedures without higher level review or approval. Authority also means the power to accomplish a function, as well as the power to assign responsibility for carrying out the various functions of the maintenance program. The individual with authority for the CASS may design or change the CASS without having to seek approval from a higher level of management. CASS procedures should include a process to modify or revise the CASS.

2) Responsibility is an obligation that comes with accountability to ensure the successful completion of tasks and functions in accordance with applicable policies, procedures, and standards. This work may be accomplished directly by the individual with the responsibility, or the responsibility for the work may be delegated. The individual with responsibility for the CASS has the obligation to carry out the functions of the CASS, including overseeing and managing any personnel who are assigned CASS functions and duties. Note that for smaller organizations where personnel share duties and may only carry out CASS functions part time, this oversight and management responsibility relates only to those part-time tasks.

B. Authority and Responsibility.

1) An individual or position within the maintenance organization should have authority for the CASS, and an individual or position within the maintenance organization should have overall responsibility for managing and implementing the CASS. An individual may have both responsibility and authority for the CASS.

2) That individual might also have responsibility for other functions as well as the CASS. It is common for the individual with responsibility for CASS functions to delegate some or much of this work to others within the organization, depending on the size and staffing of the operator.

3) What the FAA expects is clear responsibility for the overall CASS functions so that there is not a fragmented system with a high risk of confusion over who is responsible for executing a given task or function.

4) The potential exists for a conflict of interest between personnel managing daily operations within the carrier and those who serve in an oversight role. Personnel with CASS

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responsibilities and duties should be as independent as possible from the day-to-day operations of the maintenance program. Theoretically, outside personnel contracted to perform such work for the air carrier conduct the most independent, objective audits.

5) Air carrier personnel who are conducting audits should work in separate departments from the departments performing the actual maintenance activities that are being audited. However, this is not necessarily feasible for small operators. At small operators, personnel performing CASS functions, particularly audits, may consist of one or more of the following:

a) Borrowed personnel from other shops or departments. The operator's procedures should include ways to avoid having these individuals assigned to audit areas where they normally work.

b) The company owner or chief executive officer (CEO), particularly if there are no other employees and the CASS audits are focused on outside vendors and maintenance providers because all or most of the actual inspection and maintenance work is accomplished through contracts.

c) Outside resources contracted to perform audits and analysis for the company.

d) Others deemed qualified by the operator to provide the operator with an independent objective audit, operational data collection, and analysis services that fulfill the requirements of a CASS.

3-3898 VERIFY THE CASS FUNCTIONS CONCERNING RM.

A. RMP. In an effective CASS, you should be able to identify the principles of the systematic RMP that:

- Establish a plan, including the scope of the process and priorities (e.g., detect and prevent noncompliance);
- Specify the areas of concern for surveillance and analysis (personnel, maintenance and inspection programs and organizations, operations, aircraft, facilities, systems);
- Identify hazards or potential threats to the operation;
- Determine how likely such hazards are to be realized and actually cause harm;
- Determine the severity of the consequences if the hazard is realized;
- Express a combination of the likelihood and severity of harm as risk; and
- Evaluate the appropriate response to the identified risk.

B. Hazard Identification. The CASS should detect and correct deficiencies in all 10 elements of its maintenance program by proactively looking for indicators and symptoms of deficiencies and reactively looking at the results of deficiencies.

1) The CASS should identify the deficiencies (hazards) within the air carrier's maintenance program during the analysis of data. The proactive approach for identifying

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deficiencies involves setting surveillance priorities based on risk assessments aimed at maintaining compliance and safety in inspection and maintenance.

2) A CASS should take into account four principal potential sources of hazards:

- Personnel (hiring, capabilities, interaction);
- Equipment (design, maintenance, logistics, technology);
- Workplace (environment, sanitation); and
- Organization (standards, procedures, controls).

3) However, a CASS may recognize hazards through actual events such as an incident or accident (a more reactive approach). These events provide clear evidence of problems in a system and therefore provide an opportunity to investigate the event and identify the hazards putting the system at risk. In practice, both proactive processes and reactive measures can provide a valuable means of identifying hazards as a CASS should evaluate them.

4) An air carrier CASS should include clear procedures for determining:

- Who will be responsible to perform hazard identification;
- What personnel training or qualifications will be required to participate in hazard identification;
- When to perform hazard identification;
- How to accomplish the determination of a hazard; and
- How to document the hazard.

C. Risk Analysis and Assessment.

1) Analysis, Likelihood, and Severity Assessment. After confirming the presence of a hazard, and keeping with the concept of managing risk to an acceptable level, risk analysis is required to assess its potential for harm or damage. Analyze, assess, and rank all identified hazards in the order of their risk potential. Risk analysis and risk assessment use a conventional breakdown of risk by its two components: likelihood of occurrence of an injurious mishap and severity of the mishap related to an identified hazard, should it occur. A common tool for risk decision making and acceptance is a risk matrix similar to those in the current edition of U.S. Military Standard (MS) MIL STD 882, Standard Practice for System Safety, and the International Civil Aviation Organization (ICAO) Safety Management Manual (SMM). Figure 3-131C, Sample Risk Matrix, shows an example of one such matrix. Operators should develop a matrix that best represents their operational environment. The matrix should be consistent throughout the operator's organizational structure.

2) Risk Analysis.

a) The definitions and final construction of the matrix is left to the operator's organization to design. Terms that are realistic for the operational environment will define each level of severity and likelihood. This ensures that each organization's decision tools are relevant to their operations and operational environment, recognizing the extensive diversity in this area.

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b) An example of severity and likelihood definitions is shown in Table 3-124A, Sample Severity and Likelihood Criteria. Each operator's specific definitions for severity and likelihood may be qualitative, but quantitative measures are preferable, wherever possible.

Table 3-124A. Sample Severity and Likelihood Criteria

Severity of Consequences			**Likelihood of Occurrence**		
Severity Level	**Definition**	**Value**	**Likelihood Level**	**Definition**	**Value**
Catastrophic	Equipment destroyed, multiple deaths.	5	Frequent	Likely to occur many times	5
Hazardous	Large reduction in safety margins, physical distress, or a workload such that operators cannot be relied on to perform their tasks accurately or completely. Serious injury or death to a number of people. Major equipment damage.	4	Occasional	Likely to occur sometimes	4
Major	Significant reductions in safety margins, reduction in the ability of the operator to cope with adverse operation conditions as a result of an increase in workload, or as a result of conditions impairing their efficiency. Serious incident. Injury to persons.	3	Remote	Unlikely, but possible to occur	3
Minor	Nuisance. Operating limitations. Use of emergency procedures. Minor incident.	2	Improbable	Very unlikely to occur	2
Negligible	Little consequence.	1	Extremely Improbable	Almost inconceivable that the event will occur	1

3) Risk Assessment. In the development of its risk assessment criteria, we expect operators to develop risk acceptance procedures, including acceptance criteria and designation of authority and responsibility for RM decisionmaking. You can evaluate the acceptability of risk

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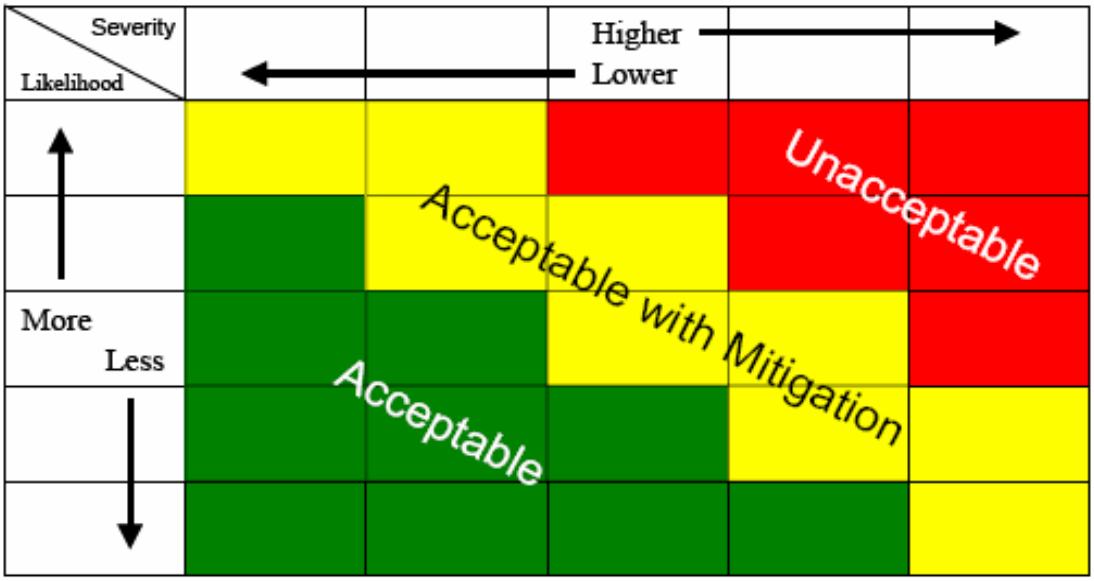
using a risk matrix such as the one illustrated in Figure 3-131C. The example matrix shows three areas of acceptability. Risk matrices may be color-coded: unacceptable (red), acceptable (green), and acceptable with mitigation (yellow).

a) Unacceptable (red). Where combinations of severity and likelihood cause risk to fall into the red area, the risk would be assessed as unacceptable and further work would be required to design an intervention to eliminate that associated hazard or to control the factors that lead to higher risk likelihood or severity.

b) Acceptable (green). Where the assessed risk falls into the green area, it may be accepted without further action. The objective of RM should always be to provide an appropriate response to an identified risk.

c) Acceptable with mitigation (yellow). Where the risk assessment falls into the yellow area, the risk may be accepted under defined conditions of mitigation. An example of this situation would be an assessment of the impact of a nonoperational aircraft component for inclusion on a minimum equipment list (MEL). Defining an operational ("O") or maintenance ("M") procedure in the MEL would constitute a mitigating action that could make an otherwise unacceptable risk acceptable, as long as the defined procedure was implemented.

Figure 3-131C. Sample Risk Matrix



4) Assessing the Risk of a Hazard. CASS procedures for analyzing and assessing the risk of a hazard should include:

- Who will be responsible to perform risk analysis and assessment;
- Is the responsible person trained to perform risk analysis and assessment;
- Specific set of criteria for how the determination will be made (i.e., detailed written procedures and a matrix);

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- Who will have the authority to approve the assessment; and
- What levels of review, if any, will be performed.

5) Risk Mitigation. The end result of the risk analysis and assessment is a decision: the risk is acceptable, acceptable with mitigation, or unacceptable. A risk control measure that is developed and implemented should be directly related to the final decision of the risk assessment.

3-3899 VERIFY THE CASS FUNCTIONS CONCERNING THE PERFORMANCE OF THE MAINTENANCE PROGRAM.

A. Surveillance of the Performance of Maintenance Programs.

1) The main tool for surveying whether the operator and its maintenance providers are properly performing the maintenance program is audits. An audit is a formal examination of the activities of an air carrier's or maintenance provider's departments or areas as compared to a standard, which is the air carrier's program as written in its manual. The air carrier's audits should be designed to measure an air carrier's and maintenance provider's compliance with their maintenance program requirements. The maintenance program itself must ensure that the maintenance provider accomplishes all maintenance activities in accordance with the processes and procedures of the maintenance program (§§ 121.367 and 135.425).

2) There are four types of audits usually used by air carriers. Generally, the differences are who accomplishes the audits and who the audit looks at.

a) Internal audits are performed by air carrier audit personnel on air carrier activities.

b) External audits are performed by air carrier personnel on activities of outside entities or maintenance providers.

c) A specific individual or position within a department, shop, or maintenance provider performs self-audits "in house."

d) Third parties (the FAA, Coordinating Agencies for Supplier's Evaluation (C.A.S.E.), Department of Defense (DOD), etc.) perform third-party audits on the air carrier or maintenance provider.

3) There are at least three audit methods used by air carriers. Generally, the differences are the audit objective and what the audit looks at.

a) The work-in-progress method audit is the primary type of method that we expect the air carrier to use. The purpose of these audits is to determine if the worker is following the manual. This is a requirement of §§ 121.367(a) and 135.425(a). A negative finding is a program deficiency under the CASS rules and must be addressed. This follows the plain language meaning of the CASS regulation (i.e., the performance of the maintenance program; are they doing what the program requires?).

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b) The transaction method is used primarily for reviewing records and serves to see if the maintenance program standard for the record form, record procedures, record completion, and record accuracy standards of the program are being achieved.

4) The systems method is a high-level, comprehensive, and documented examination of all of the activities, records, processes, and other elements of an air carrier or maintenance provider's various systems, to determine their conformity with the requirements of a standard such as the air carrier's maintenance program. These audits can also identify various latent faults in the air carrier's or maintenance provider's overall systems. These audits are usually, but not always, accomplished by a professional audit agency and result in a written and detailed report that is used by senior management to make corrections to the systems.

5) The operator's auditing process should have written procedures that include the scheduling of audits. The CASS must address both internal and external audits.

NOTE: If your operator assigns an onsite representative at a maintenance provider, you should ensure that the air carrier's CASS procedures cover this individual(s)' surveillance activities. These are classed as work-in-progress audits. Typically, these individuals will observe a noncompliance with the air carrier's manual and ensure that the maintenance provider corrects the noncompliance usually within that same day. These events must be recorded and input to the air carrier's CASS documentation system for analysis and evaluation. Otherwise, a pattern of noncompliance with the air carrier's program and manual may go undiscovered by air carrier and maintenance provider management personnel.

6) CASS procedures should include a risk-based methodology for determining priorities and for establishing and adjusting audit cycles (for example, 12-, 18-, 24-, or 36-month cycles) so that resources are focused on the most pressing issues. You should note that the RMP may show that a department or maintenance provider self-audit is applicable and effective.

7) Although the majority of the inputs to this process would be generated internally, one additional input may be the results of outside audits of the operator or its vendors conducted by entities other than the operator. For example, the results of audits or inspections conducted by the FAA or the DOD may be useful by providing an operator with:

- Specific findings requiring an RCA and possible corrective action; and
- Information useful in focusing the operator's own audits and operational data collection.

B. Scheduling Audits. The operator may approach this initial scheduling task in many different ways, ranging from resource allocation based on company experience and very basic analysis to the use of a sophisticated, software-supported risk analysis process. Within this range of possible methodologies, expect the operator's CASS audit scheduling procedures to contain processes to systematically make those decisions that are compatible with the size and complexity of its operations.

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C. Safety and Operational Objectives. Encourage your operator to make this process as structured as possible. The operator should place priority first on safety and regulatory compliance and second on issues of operational efficiency. However, an effective CASS will meet all of these objectives.

1) To identify the areas to audit and to set priorities, the CASS process should include consideration of factors in outside reports. These factors could include inspections, reports, special studies, or audits conducted by outside entities such as the FAA, DOD, Department of Transportation (DOT), Office of the Inspector General (OIG), or National Transportation Safety Board (NTSB). Outside reports may address:

- Information specific to the operator or its vendors;
- Information related to the industry as a whole and of interest to the operator; or
- Information about an accident, incident, procedure/process, or equipment type that is relevant.

2) The operator should equip CASS auditors with checklists to ensure consistency and completeness of audits. The accountable manager for the CASS should ensure that the checklists are updated as needed. The checklists should be written in a manner that evaluates compliance with the 10 elements of the maintenance program. An auditor should also be permitted a level of flexibility to ask questions not contained in the checklist if he or she finds an area that requires further investigation.

3) An operator's procedures should include identification of all areas that need to be audited, along with a process for updating this list. The following list presents examples of areas operators should consider for routine audit. A CASS audit should verify that:

a) Manuals, publications, and forms (paper and electronic versions) are useable, up to date, accurate, and accessible to users when they are performing assigned duties.

b) Maintenance and alterations are performed according to the methods, standards, and techniques specified in the operator's manuals, including ensuring that major repairs and alterations are properly classified and accomplished consistent with technical data approved by the Administrator.

c) The maintenance provider properly stores, dispenses, identifies, and handles parts and components.

d) ADs are appropriately evaluated, accomplished, and tracked.

e) Aircraft modifications that have been installed as a result of AD requirements have not been removed or modified by subsequent repairs, alterations, or other modifications.

f) Maintenance providers generate maintenance records in accordance with manual procedures and are complete and correct.

g) RIIs are identified and addressed according to the operator's procedures.

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h) Authorized individuals execute §§ 121.709 and 135.443 Airworthiness Release Forms and log entries according to the operator's procedures.

i) Maintenance providers accomplish shift turnover records, work interruptions, and deferred maintenance according to applicable procedures.

j) Maintenance facilities and equipment, including base and line stations and contract maintenance providers' facilities, are adequate for the work that is to be done.

k) Personnel, including those of contract maintenance providers, are qualified and competent to accomplish their duties.

l) Tools and equipment are properly calibrated.

m) Requirements for specialized tools or training are met, such as for nondestructive testing, Category II/III maintenance, and run-up/taxi.

n) Computer programs for the maintenance program are used in accordance with specifications.

o) Maintenance providers, vendors, and suppliers provide services and products according to the operator's policies and procedures.

p) Each aircraft released to service is Airworthy.

4) CASS audits should be primarily proactive, searching out potential problem areas before they can result in undesirable events. However, CASS procedures should also address how to direct unscheduled audits in response to events or a series of events. For example, rejected takeoffs, unscheduled landings, in-flight shut downs (IFSD), accidents, or incidents may indicate the need for special audits or surveillance under a CASS.

5) One of the primary purposes of a CASS is to detect and analyze trends for indications of program weaknesses or deficiencies. For example, CASS auditors would not necessarily audit a single maintenance-related rejected takeoff, although the CASS would investigate the event as part of the reactive function. A CASS would, however, consider whether that instance indicated a need to focus audits on a particular area from the trending proactive point of view.

6) Auditors and analysts should maintain informal lines of communication with personnel in the other departments so that maintenance personnel can discuss concerns they may have. Through this informal communications process, the operator can learn about potential hazards in the system. For example, the operator may learn about an event that could have occurred but, because of some intervention, did not. This event would be known to shop personnel but is otherwise difficult or impossible to detect in routine audits. With informal lines of communication open to shop personnel, a CASS may detect this near-event. You should ensure that the operator's CASS procedures address how to encourage this type of communication and interaction.

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D. Analysis of Audits.

1) Audit results should undergo an analysis to identify a deficiency or a real/potential hazard in any aspect or element of the maintenance program. The objective of the audit analysis is to allow the operator to address the problem in such a way as to avoid recurrence of the deficiencies. To the extent possible, the operator should set forth the analysis process in the CASS documentation.

2) The analysis tells operators where to allocate resources and helps them understand what was identified. RM principles should be incorporated into the analysis process. The analysis will help CASS personnel determine the level of priority that the issue merits and what type of additional technical expertise may be required to complete the RCA and evaluate corrective action options.

3) The analysis process should be as objective as possible to avoid any tendency to promote individual or commercial interests. The more thorough the analysis, the greater the likelihood the operator will uncover why the system deficiency occurred and how the organization can respond definitively.

4) The analysis process starts during the audit itself, because auditors must collect information for later analysis. If a CASS is to uncover a procedural weakness, for example, information about the procedure must be collected. This should be factual and objective information that does not contain premature judgment about a root cause.

a) Auditors and analysts should be encouraged to be inquisitive and think in terms of “what if?” so that the CASS functions proactively, detecting problem areas or trends before they can lead to an accident, incident, or infraction of regulations.

b) For example, what if event X occurred in conjunction with observed condition Y? While audits are designed mainly to verify that an operator is performing maintenance in accordance with its manual, the regulations, and applicable requirements, auditors and analysts should also be alert for systemic deficiencies.

c) There may be procedures in the manual that are correctly followed but that have become outdated, conflict with other manual procedures, or for some other reason are in need of a change. This assessment of the system design should also place priority on finding the systemic or root cause of a program deficiency over seeking to assign personal blame at any level of the organization.

d) This inquisitive approach should spread throughout the CASS organization, from determining audit priorities and scheduling through auditing and analyzing, including monitoring and evaluating corrective actions. The end result for this system assessment is seeking out the identification of new or potential hazards.

5) The audit analysis process is typically more qualitative than the operational data analysis. Operators may find it useful to manage the collected data through database or quantitative applications. Be aware that this approach does not have to be complicated or costly. The level of formality and sophistication should match the operator’s conditions.

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3-3900 VERIFY THE CASS FUNCTIONS CONCERNING THE EFFECTIVENESS OF THE MAINTENANCE PROGRAM.

A. Surveillance of the Effectiveness of the Maintenance Program.

1) The main tool for assessing whether the air carrier's maintenance program is effective is the collection of operational data (data resulting from airplane operations). This way, the output of the maintenance program can be measured. However, not all operational data or information may be useful for determining maintenance program effectiveness.

NOTE: Consistent with the "effectiveness" part of the CASS regulation, the primary type of effectiveness surveillance that the operator should be accomplishing is the collection of operational data.

2) A primary goal of air carrier maintenance programs is to ensure that each air carrier aircraft released to service is Airworthy, as well as to provide the maximum level of availability for operations in air transportation. However, in order to consistently reach these goals, the air carrier must have a means of determining if the maintenance program is producing the intended results.

3) Generally speaking, at the end product level, an indicator of the effectiveness of the maintenance program is the amount of time an air carrier aircraft is not available for operations in air transportation due to issues controlled by the maintenance program. This particular effectiveness indicator can be broken down into fleet availability or individual aircraft availability, and broken down still further to the reliability of aircraft systems, subsystems, and components. In simple terms, the amount of unscheduled maintenance that reduces the availability of an air carrier aircraft for operations in air transportation is a primary indicator of whether or not the maintenance program is producing its intended results.

B. Collecting Operational Data.

1) Air carrier operational data collection systems under the CASS effectiveness activity are critical to the air carrier's ability to determine the level of effectiveness of its maintenance program. These systems should have capabilities for collecting, storing, managing, and retrieving all types of operational data that the air carrier can use to help it determine the level of maintenance program effectiveness.

2) Current systems that collect information regarding the status of aircraft structures, systems, and engines have a wide variance ranging from simple paper systems administered manually by air carrier personnel to the very sophisticated, complex, and automatic, real-time data collection systems that use information collected from sensors embedded all over the aircraft. As of this writing, there are operational data collection systems planned that will manage, and sometimes repair, system faults through automatic computer activity. Newer transport category aircraft are delivered with sophisticated electronic, propulsion, flight control, and structural monitoring and data acquisition systems.

3) In recent years, an increased emphasis has been placed on using these automatic data collection capabilities, in conjunction with emerging sensor, data processing, and systems

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status monitoring and assessment technologies, to realize real-time conditions of aircraft components. While most of these automatic systems are not well defined, the goal is to use real-time flight data to detect system flaws, defects, or abnormal operating conditions early enough to allow timely intervention.

4) The key thing to remember is that these new maintenance management systems are part of the continuing evolution of maintenance. They should be characterized as a new and different way of doing maintenance, not a means of eliminating maintenance. As maintenance is still being accomplished, these systems do not eliminate maintenance actions. They may, however, eliminate some scheduled maintenance activities.

5) Contact the Aircraft Maintenance Division (AFS-300) for specific guidance before you authorize an air carrier to use an automatic data collection system or automatic Aircraft Systems Health Monitoring and Management System.

C. Operational Data Procedures.

1) The operator should have written procedures to guide its operational data collection process. CASS procedures should include a risk-based methodology for determining the type and frequency of operational data collection so that resources focus on the most revealing data, with regard to maintenance program effectiveness. An air carrier CASS should include clear procedures for determining:

- What operational data to collect;
- Who will collect it;
- How to collect it;
- When to collect it; and
- What to do with it.

2) Operational data can be divided into routine or nonroutine data collection and analysis. The routine data element uses a proactive data collection and analysis process that seeks to identify indicators of maintenance program ineffectiveness before they can progress to a functional failure that results in a reduction in aircraft availability. Some examples are:

- Aircraft logbook information detailing unscheduled maintenance, including maintenance deferred in accordance with the MEL/Configuration Deviation List (CDL);
- “Chronic” aircraft systems that have repeat write-ups within a specified time period (e.g., 10 to 15 days);
- Corrosion prevention and control program findings;
- Engine condition trend monitoring data;
- Individual item failure rates; and
- Mechanical Reliability Reports (MRR), Mechanical Interruption Summaries (MIS), and similar data.

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3) The nonroutine operational data element is a reactive data collection and analysis process that seeks to identify indicators of maintenance program ineffectiveness after an undesirable event has occurred. Some examples are:

- Accidents and incidents;
- In-flight engine and propeller separations and uncontained engine failures;
- In-flight engine shutdowns;
- High-load events;
- Flight delays and cancellations related to mechanical issues;
- Rejected takeoffs;
- Unscheduled parts replacement or unscheduled maintenance;
- Unscheduled landings due to mechanical issues;
- Lightning strikes; and
- Hard landings.

4) As with reactive audit surveillance, a CASS generally approaches problems from the analytical, systems perspective. For example, in response to one or more rejected takeoffs, a CASS might focus the operational data collection and analysis to determine if a pattern in rejected takeoffs was evident, or a CASS might examine other types of data in relation to the rejected takeoff situation.

5) The above data sets are presented only as examples. Although the data sets are oriented toward equipment, this area of a CASS may also collect other types of data, such as information on the different types of maintenance errors experienced by the operator.

6) The operator's CASS documentation should include a means of identifying data that is relevant and useful for that operator to use in monitoring the effectiveness of its specific maintenance program. The operator should periodically review and reevaluate the usefulness of the data it collects and analyzes to accomplish this portion of the CASS.

D. Analysis of Operational Data.

1) Provide analysts with an understanding of the potential significance of each data set and how to process the data to understand its significance. This may require statistical analysis to compare the frequency of certain events, equipment failures with a determined norm, or qualitative analysis to evaluate reports of certain types of events.

NOTE: This process is not necessarily the same as what would be used in an FAA-approved reliability program.

2) Emphasize that the analysis of operational data should consider root causes of negative trends or anomalies. This preliminary RCA, including human factors, may require collaboration with technical personnel in the affected areas, specialists in engineering and reliability departments, or the OEM.

3) Delineate the roles of the CASS analysts as well as other departments or personnel in the analysis of operational data.

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4) Some operators select a system that uses alerts or warnings if results of the analysis exceed certain predetermined parameters. A CASS should not rely completely on such alerts to the exclusion of analysts' judgment. The FAA's expectation of a CASS in this regard is that the operator has a complete, written procedure to review and analyze the operational data collected and to determine when further review is necessary.

5) While the surveillance and analysis steps differ for the verification of the performance of the maintenance program versus verification of the effectiveness of the program, the process merges when responding to CASS findings and providing a corrective action, as necessary.

6) Results from the two requirements of CASS (performance and effectiveness) identify potential deficiencies (hazards) in the maintenance program. In responding to these findings and analyses, the objective of a CASS is to determine the root causes of program deficiencies and address them appropriately, regardless of the perspective from which the deficiencies are found. Note that the discussion is focused on a CASS function, not an organization. For a given operator, that function might be performed by more than one organization.

7) Generally, the area responsible for surveillance will present their results to the technical or production area of the operator with a preliminary analysis of the collected information and, in some cases, possible underlying causes of the problem. Personnel in technical or production areas usually complete the RCA and develop proposed corrective action alternatives.

3-3901 VERIFY THE CASS FUNCTIONS CONCERNING THE CORRECTIVE ACTION PROCESS. A corrective action process is the process of interdependent activities that traces the symptom(s) of a problem to its cause, produces solutions in a timely manner for preventing the recurrence of the problem, and implements the changes. The activities within the corrective action process are:

- RCA;
- Development of corrective action;
- Implementation of corrective action; and
- Monitoring a corrective action.

A. RCA.

1) RCA applies to both audit findings and analysis of results and trends in the operational data. For example, either audits or operational data analysis may point to maintenance errors caused by inadequate training. Analysis should not stop with simply determining which mechanics received inadequate training and then retraining the mechanics. Rather, the analysis should determine why the training breach occurred and consider areas in management, communications, scheduling, or training program design that may be involved.

2) The key is to have a CASS structure that addresses the basic disciplines and elements involved in finding and correcting program deficiencies. The CASS procedures should

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note that in performing an RCA, all relevant areas should be considered, including the role of senior management in setting appropriate policies, procedures, and an environment of communication.

3) Following a systems approach, an RCA treats errors as defects in the system rather than in an individual. RCA looks beyond the symptom to find the organizational defect that permitted an error to occur, to correct the fundamental problem, and to prevent recurrence. The more thorough the analysis, the greater the likelihood that the operator will uncover why the system deficiency occurred and how the organization can respond definitively.

4) The process starts during the audit itself, because auditors must collect information conducive to later analysis. If a CASS is to uncover a procedural weakness, for example, information about the procedure must be collected. This should be factual and objective information, not a premature judgment about the root cause. RCA is a key to any complete CASS, even though procedures may vary in complexity from operator to operator.

5) Regarding the thoroughness of the analysis, the principles and considerations of an RCA are closely related to those of risk assessment. Both processes do not simply consider the person involved in an issue (e.g., the mechanic made a mistake) but all aspects of the organization within which that person works. This approach includes the premise that human error is a consequence of the system rather than a deliberate action of an individual and that proactive measures and continuous reform of different aspects of the processes and organization can address latent conditions in the system and increase the system's resistance to operational hazards. The term "latent condition" refers to flawed procedures or organizational characteristics that are capable of creating hazards if the right conditions or actions occur.

6) Ensure that the operator's procedures or corporate culture do not advocate the blame culture. The blame culture can have a significant negative effect on safe operations. Terminating the individual who has the blame assigned is usually not consistent with an effective RCA.

a) Operators that adopt the blame culture:

- Fix the blame and move on;
- Focus on the individual(s) who made the error;
- Stop short of identifying systemic problems and root causes;
- Never fix the problem; and
- Allow mishaps/mistakes to recur.

b) Written CASS procedures for an RCA should address the following questions:

- Do documented procedures lay out when the RCA process will be used?
- What events would trigger the RCA process?
- Do procedures describe who will perform an RCA?
- Are CASS auditors and other CASS personnel trained in RCA?
- Are personnel who are developing a corrective action trained in RCA?

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- Do the personnel performing an RCA have a direct knowledge of the process deficiency?
- Are there procedures specific to how an RCA will apply equally to the performance and effectiveness of CASS?
- Does management "support" RCA?
- How does an RCA address findings from outside sources?

B. Areas of Emphasis for an RCA.

1) Systems analysis plays an increasingly important role in a CASS because of the increasing complexity and variety of operations, equipment, and organizations. Systems analysis emphasizes a coordinated approach to an enterprise in terms of integrated networks of people and other resources performing activities that accomplish some mission or goal in a prescribed environment.

2) Focusing on a systems approach for identifying why a deficiency occurred, personnel working on the proposed corrective action(s) should ensure that they evaluate the characteristics within the design of a process. This approach recognizes the wide range of interrelated issues that may be associated with a problem in the system, such as management policies, communications, and pilot technique, in addition to the maintenance activities themselves.

3) Human factors analysis looks at how humans communicate and perform in the work environment and then seeks to incorporate that knowledge into the design of equipment, processes, and organizations. This enhances safety and maximizes the human contribution, partly by designing systems to anticipate the inevitability of human error. Human factors that audit checklists can address include basic issues, such as whether there is adequate lighting for mechanics and inspectors to perform their work and whether schedules permit personnel to get proper rest. The discipline addresses a wider range of issues affecting how people interface with technology and the operational system, including:

- Human physiology;
- How people learn and perceive;
- Equipment, technology, and documentation; and
- Workplace.

4) Knowledge gained from human factors analysis can:

- Help avoid maintenance errors;
- Ensure that personnel skill sets match task requirements;
- Ensure that skill sets are maintained and improved; and
- Enhance the work environment.

a) This knowledge can help CASS analysts perform an RCA.

b) Continuing with the previous example of inadequate training, with insufficient awareness of human factors issues, operators may trace a maintenance error to a mechanic or

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technician who appears to have received insufficient training for the task and determine that the solution is more technical training. However, further analysis may reveal that there are contributing flaws in equipment design, job cards, manuals, the work environment, or organizational procedures, such as shift turnover, that more training will not satisfactorily overcome. Or, it may turn out that a different kind of training, perhaps involving decisionmaking skills, is called for.

5) As of this writing, the FAA is deeply involved in cooperative efforts with industry and academia in promoting human factors in aviation. This field is rapidly evolving, particularly in its application to aviation maintenance. According to a study conducted for the FAA, which cited Boeing research, maintenance error contributes to a significant portion of air carrier accidents, with shift turnover errors and work interruptions standing out as leading underlying causes. Based on the growing importance of human factors and information available to industry, the FAA expects that operators will apply concepts of human factors to their CASS surveillance and analysis.

6) CASS surveillance also should ensure that an RCA considers human factors. Those personnel designated to respond to events such as rejected takeoffs should also include human factors as part of their investigation of individual events. Otherwise, data reviewed in a CASS may be incomplete.

7) A strong CASS will focus on safety issues and support a just culture. Although the function of the CASS is to identify and correct deficiencies in the maintenance program, an effective RCA may find inadvertent human errors that can be corrected with compliance tools, or unacceptable behavior that may require company disciplinary or FAA enforcement action. Safety-conscious and compliant individuals will naturally report, cooperate, and address mistakes, design flaws, and/or systemic issues within a culture that is just. When a fair and impartial RCA uncovers facts that identify unsafe acts that are intentional or reckless, or reflect a pattern of unacceptable risk taking, safety-conscious individuals expect just mitigating action and accountability to take place.

C. Analytical Tools and Processes. While it is not a requirement for an operator to implement any specific externally developed system, analytical tools or processes are available to assist in the analysis process. In view of the continuing evolution of this process, as of this writing, some examples of these tools are listed below.

1) The Maintenance Error Decision Aid (MEDA) Tool. The Boeing Human Factors Engineering group in collaboration with the FAA, airlines, and the International Association of Machinists developed this tool for analyzing human performance issues related to maintenance errors and trends. Operators use MEDA to track events, investigate and prevent maintenance errors, and identify contributing factors, corrective actions, and prevention strategies. A software analysis package has been developed to work with this aid and facilitate analysis of systemic issues.

2) The Managing Engineering Safety Health Tool. The University of Manchester developed this tool in collaboration with British Airways Engineering. The focus of this system is researching the workplace and organizational environment in aircraft maintenance to find the

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issues with the greatest potential to contribute to human factors problems. The system uses software, diagnostic, and sampling tools. Managing Engineering Safety Health conducts anonymous survey-like assessments among personnel at the work location. This is a more structured, data-intensive approach toward determining and monitoring personnel attitudes toward the system than the interview process discussed earlier. The industry has far less practical experience with Managing Engineering Safety Health than with MEDA.

3) The Human Factors Accident Classification System Maintenance Extension Tool. The U.S. Naval Safety Center, in collaboration with the FAA, developed this tool for use in the air carrier industry as well as naval aviation. This comprehensive system incorporates a number of analytical tools and has profiled maintenance errors and contributing conditions, permitting development of potential prevention measures. While the Human Factors Accident Classification System Maintenance Extension may be more sophisticated than many operators would need, it demonstrates principles and techniques of software-aided analysis that operators could apply to a CASS.

D. Developing and Implementing a CAP.

NOTE: For purposes of the CASS, CAP stands for Corrective Action Plan. Please do not confuse the acronym CAP for Comprehensive Assessment Plan used in SAS.

1) Development. After the assessment of risk and completion of an RCA, a final decision can be made on a proposed CAP. As directed by written procedures, the CAP should address the root cause of the deficiency and provide a means of verifying that the corrective action fixed the problem.

a) Responsibility/Authority.

1. A CASS should designate the position or organization responsible for evaluating and approving proposed corrective actions as well as the parties responsible for implementing, monitoring, and ensuring that all affected parties receive notification, both within the company and externally, if necessary.

2. The CASS director or other designated manager may appoint a corrective action team to design and propose a corrective action. The team, which typically represents a cross section of the departments involved in audits, operational data collection, analysis, and production, oversees the implementation of the corrective action.

3. Technical and reliability control boards are most often used in conjunction with FAA-approved reliability programs; however, a similar concept applies to a CASS, even if no FAA-approved reliability program exists.

4. The danger exists that one individual might be assigned to develop an entire CAP for which they have relatively little or no control (authority) to implement, and is a discrepancy in itself and must be fully addressed before any corrective action is assigned. Ultimately, the direct responsibility must always remain with the department required to address the discrepancy.

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5. For example, a corrective action may require a revision to a manual. The department (inspection) that is responsible for the CAP might require the assistance of another department (technical publications) to publish the revision. Consequently, the department that is able to publish the manual would now be responsible (secondary) for publishing the manual.

6. It would be acceptable for auditors to help guide the responsible persons through the corrective action process. However, the auditors must remain independent from the corrective actions they may subsequently audit. The roles of auditors, analysts, managers, and committees should be clear when implementing the CAP.

7. The appropriate authority must accompany the responsibility if the process is to be effective. CASS procedures should address:

- Who has received the authority to develop the CAP?
- Who will be responsible to develop the CAP?
- Who is responsible to approve the CAP?
- Does the air carrier maintain the appropriate role of auditors in developing a CAP?

b) Duties.

1. The CASS procedures should identify how this plan will receive approval and at what level of the company. The CAP should address all relevant issues, including a timetable for completion of the action with milestones, if appropriate. The appropriate technical department (and other departments, such as flight operations, if the corrective action goes beyond the inspection and maintenance organizations) should then implement the plan.

2. While developing a corrective action, consideration should be made for determining the effectiveness of the corrective action. The corrective action should address what exactly would determine the effectiveness of the corrective action during the followup process. Being that the corrective action is developed to address the causal factor(s), the determination of the effectiveness should be based on what measure(s) would be used to validate the effectiveness.

3. For example, if the deficiency involved the installation of incorrect fasteners and the root cause was determined to be the lack of training, the future followup would evaluate the effectiveness of any training that might have been implemented as it relates to the deficiency. Are the incorrect fasteners being installed after training has been accomplished?

c) CASS procedures should specify that personnel will analyze a corrective action proposal carefully before its selection and implementation to ensure that corrective action is necessary and will actually fix the problem and not lead to unintended negative consequences.

1. Air carrier procedures should instruct both the CASS and technical area personnel of the need to consider the impact of the proposed corrective action on other aspects of the operation. This includes other areas of the maintenance program, such as manuals. The

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corrective action may require coordination with other areas, such as flight operations, that might be affected.

2. A CASS should provide written procedures for the development of a CAP that addresses:

- When a CAP will be developed, based on risk assessment;
- How to develop a corrective action proposal with the focus being on addressing the root cause, as necessary;
- Documentation of timelines for accomplishment of tasks within the CAP;
- How will the plan be approved;
- The recordkeeping and documentation requirements of the CAP;
- How risk assessment and/or systems analysis will be used to guard against unintended consequences; and
- How the effectiveness will be determined during the followup process (as necessary).

3. In some cases, the operator may require data or assistance from a manufacturer to help correct a deficiency detected by the CASS. The operator should offer guidance in its CASS procedures, based on its particular experience, on how CASS and other personnel should address the need for assistance or information from manufacturers, and how to proceed in case of unsatisfactory or slow responses. This may include developing a standardized letter citing the need for this information or assistance to satisfy the requirements of § 121.373, § 135.431, or other pertinent regulations. It may also include working with the FAA principal inspector (PI) to find solutions.

2) Implement the CAP. After development of a CAP, the responsible individual(s) must implement the plan. The importance of actually implementing the plan cannot be overstated. The completion of the corrective action must occur so that the discrepancy is addressed and the necessary followup surveillance can occur so that the effectiveness of the corrective action can be determined.

a) Responsibility/Authority.

1. The danger exists that one individual might be assigned to implement an entire CAP for which they have relatively little or no control (authority) to implement, and is a discrepancy in itself and must be fully addressed before any corrective action is assigned. Ultimately, the direct responsibility must always remain with the department that is required to address the discrepancy.

2. For example, a corrective action may require a revision to a manual. The department (inspection) that is responsible for the CAP might require assistance from another department (technical publications) to publish the revision. Consequently, the department that is able to publish the manual would now be responsible (secondary) for publishing the manual.

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3. In the event that a CAP requires changes, procedures should assign authority to specific individuals to enable them to make changes to the plan.

4. It would be acceptable for auditors to help guide the responsible persons through the corrective action process. However, the auditors must remain independent from the corrective actions that they may subsequently audit.

5. The roles of auditors, analysts, managers, and committees should be clearly defined when implementing the CAP.

6. The appropriate authority must accompany the responsibility if the process is to be effective. CASS procedures should address the following questions:

- Who will be responsible for implementing the CAP?
- Who is responsible for making changes to the CAP?
- Who will determine when the CAP has been completed?
- Does the air carrier maintain the appropriate role of auditor when implementing a CAP?

b) Duties. Accomplishment of these duties is essential to the success of a CAP.

1. CASS procedures should ensure that the corrective action is implemented. Procedures should specify how to implement the plan from the time of development to closure.

2. The CAP should be specific as to what is expected to occur or to be accomplished. Clear timelines should document the completion of specific actions within the plan. For example, a CAP might have numerous actions that must occur in order to complete the plan, perhaps in a sequential order.

3. It is essential that communication exist throughout the corrective action process. Procedures should include guidelines for how the technical area will communicate the status of the corrective action to the person responsible for monitoring implementation. Also, procedures should provide all parties involved with what will constitute a closure of individual action items within the plan and/or the plan in whole.

4. The procedures for auditors, analysts, managers, and committees should be clearly established if the process is to be effective. CASS procedures should address the following questions:

- How will the implementation of a CAP be accomplished?
- How will changes to the documented plan and/or timeline be addressed?
- When will individual action items within the CAP and/or entire CAP be considered “closed”?

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3) Monitoring the CAP.

a) Under the CASS, monitoring of the CAP should be a documented and systematic approach towards ensuring the implementation of the documented CAP. Without documented procedures for monitoring the CAP, the possibility exists that corrective action will not be implemented.

b) Furthermore, if a corrective action was developed to mitigate or eliminate causal factors and was not implemented, the effectiveness of the corrective action could not be measured and the causal factors would still exist. CASS procedures should ensure that the corrective action was completed.

c) Responsibility/Authority.

1. An identifiable individual or entity (such as a CASS board) should be given the overall responsibility and authority for monitoring the status of the CAP. CASS auditors or analysts may have the direct responsibility of ensuring that the corrective action has been completely implemented in accordance with the established timetable or, if not, determining why the timetable has changed.

2. Responsibilities should include determining if any changes in the corrective action are acceptable, as well as who will make the determination for plan closure.

3. The roles of auditors, analysts, managers, and committees should be clear when monitoring the CAP. The appropriate authority must accompany the responsibility if the process is to be effective.

4. CASS procedures should address:

- Who will monitor the status of the CAP?
- Who will approve changes to the CAP?
- Who will determine when the CAP has been completed?

d) Duties. The following procedures are essential to the success of the corrective action:

1. CASS procedures should ensure that the corrective action was completed. Therefore, procedures should specify how the plan will be monitored from the time of implementation to closure.

2. The means for tracking the corrective action against a timeline will vary between operators, and methods are normally dependent on the policies of the operator. Monitoring the plan may be accomplished through the use of electronic media and/or paper media. Procedures should identify what method or methods will be used to monitor the implementation of the CAP.

3. Effective communication must exist between the owner of a CAP and the individual who is monitoring the plan. Procedures should include clear guidelines for

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communicating the status of the corrective action from the affected technical area to the individual responsible for monitoring implementation. Also, procedures should provide all parties involved with a clear performance standard for closure of individual action items within the plan and/or the plan as a whole.

4. Auditors, analysts, managers, and committees must have clearly established procedures if the monitoring process is to be effective. CASS procedures should address the following questions:

- How will the CAP be tracked (monitored) in accordance with the timeline?
- How will automation or computerized systems be used to monitor the implementation?
- How will changes to the documented plan and/or timeline be addressed?
- When will individual action items within the CAP and/or entire CAP be considered "closed?"

E. Verify the CASS Functions Concerning the Followup Process.

1) At the beginning of the corrective action process, a risk-based determination was made to mitigate or eliminate the associated risk. This determination led to the development and implementation of a CAP (risk control).

2) When a CAP included an RCA, the primary goal of the CAP would have been to prevent recurrence of the discrepancy. To be effective, the plan would have specifically addressed the identified causal factor(s).

3) Additional surveillance or data collection may be necessary to validate the effectiveness of the CAP. The followup surveillance plan is the means by which the effectiveness is validated and has two principles: verifying the effectiveness of the CAP and additional surveillance planning (auditing and/or data collection).

a) Responsibility/Authority.

1. An identifiable individual or entity (such as a quality organization) should be given the responsibility and authority for performing the followup of the CAP. CASS auditors or analysts may have the responsibility for making a determination of the effectiveness of the CAP and may sometimes determine that the corrective action was not effective and requires additional action(s).

2. The roles of auditors, analysts, managers, and committees should be clearly defined in the CAP process as well as the additional surveillance planning process. The appropriate authority must always accompany the responsibility if the process is to be effective.

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3. CASS procedures should address the following questions:

- Who will validate that the CAP was effective?
- Who will approve changes to the surveillance planning or immediate actions?

b) Duties.

1. Performance measures to evaluate the effectiveness of the corrective action should be specific. The performance measures should have been established during the development of the CAP and should provide the information necessary to determine the level of action plan effectiveness.

2. Verifying the CAP effectiveness may require a one-time audit or could require a series of frequent audits. CASS procedures should include how to determine the level of followup audits for verifying corrective action implementation. For example, based on the risk assessment or complexity of the corrective action, the designated CASS analyst or team may schedule special, less frequent, or more frequent audits.

3. They may also change the data collection process or institute other means of verification. The FAA expects the operator to have a well-designed and logical process to design the followup actions.

4. The accomplishment of the followup process should be verifiable. The operator should document the outcome of the process. This documentation should provide enough information to be able to conclude that the process has been accomplished.

5. The procedures for auditors, analysts, managers, and committees should be clear if the process is to be effective. The methodology will probably vary from one operator to another, but the principles should be evident and verifiable in written procedures.

6. CASS procedures should address:

- What measures will be used to evaluate the effectiveness of the corrective action, including identification of data to be collected, awareness of the possibility of unintended consequences, and events that should trigger a response;
- When and/or how often the followup will occur;
- How to use the automation or computerized systems to document the followup process; and
- How to determine changes to surveillance planning and/or data collection.

F. Analyze Results. Follow SAS guidance for Module 5.

3-3902 TASK OUTCOMES. Follow SAS guidance for Modules 4 and 5.

3-3903 FUTURE ACTIVITIES. Follow SAS guidance.

RESERVED. Paragraphs 3-3904 through 3-3915.

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VOLUME 3 GENERAL TECHNICAL ADMINISTRATION

CHAPTER 60 PROCEDURES FOR AVIATION SAFETY INSPECTOR DECISIONMAKING

Section 1 Safety Assurance System: Aviation Safety Inspector Decisionmaking Regarding Airworthiness Directive Compliance

3-4863 REPORTING SYSTEM(S).

A. PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS). Use activity codes 3649 and 5649.

B. Safety Assurance System (SAS). Use the SAS Business Process and Tools, Analysis, Assessment, and Action (AAA), risk management process (RMP), and Action Item Tracking Tool (AITT).

NOTE: This section is related to SAS Element 4.2.3 (AW), AD Management.

3-4864 OBJECTIVE. This section provides guidance to aviation safety inspectors (ASI) to determine if a product complies with an Airworthiness Directive (AD). It also provides guidance for ASIs when they are unable to clearly determine the compliance status of the product.

3-4865 GENERAL. The Federal Aviation Administration's (FAA) policies and procedures require all ASIs to determine what resources are needed to solve difficult and controversial issues, which will eliminate single-person and subjective determinations. ASIs are directed to seek guidance from internal FAA resources, including the certificate-holding district office (CHDO), principal inspectors (PI), Aircraft Evaluation Group (AEG), Aircraft Certification Office (ACO), Regional Office (RO), and/or appropriate FAA headquarters (HQ)-level branch. ASIs should rely on these resources to gather the appropriate information on which to determine AD compliance and applicability.

3-4866 INTRODUCTION. The FAA is responsible for announcing and enforcing adequate standards and regulations. Title 49 of the United States Code (49 U.S.C.), § 44702(b)(1)(A) specifies, in part, that when prescribing standards and regulations and when issuing certificates, the FAA will give full consideration to "the duty of an air carrier to provide service with the highest possible degree of safety in the public interest." Thus, § 44702(b)(1)(A) should be clearly understood to mean that this responsibility rests directly with the air carrier, irrespective of any action taken, or not taken, by an FAA inspector or the FAA.

3-4867 DEFINITIONS.

A. Airworthiness. Title 49 U.S.C., § 44704(d) best defines airworthiness by imposing a two-pronged definition. In order to be Airworthy, an aircraft must:

- Conform to its type design certificate, and
- Be in condition for safe operation.

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B. Airworthiness Directives (AD). ADs are substantive regulations that the FAA issues in accordance with Title 14 of the Code of Federal Regulations (14 CFR) part 39, § 39.5. ADs are issued when:

1) An unsafe condition has been found to exist in particular aircraft, aircraft engines, propellers, or appliances installed on an aircraft; and

2) The condition is likely to exist or develop in other aircraft, aircraft engines, propellers, or appliances of the same type design. Once an AD is issued, a product may be operated only after it meets the requirements of that AD.

NOTE: Sensitive Security Information (SSI) AD guidance is located in Volume 6, Chapter 2, Section 36.

C. Alternative Method of Compliance (AMOC).

1) An AMOC is an FAA-approved method of compliance, other than the one specified in an AD, that resolves an unsafe condition on a product and provides an Acceptable Level of Safety (ALoS). An AMOC may also change the time required to accomplish an AD.

2) In August 2002, the FAA made Amendment No. 39-9474 to part 39. The amendment incorporates several standard provisions previously included in individual ADs. One standard provision specifies that an AD applies to a product even if the product is modified, altered, or repaired in the area addressed by the AD. In such cases, an AMOC may be required. Another standard provision identifies procedures for asking the FAA to approve AMOCs to an AD.

D. Product. Per § 39.3, the term “product” means an aircraft, aircraft engine, propeller, or appliance.

E. Method of Compliance Letters. Method of compliance letters involve an approval when an AD contains statements similar to the following example: “If cracked skin is found, before further flight, repair the cracked skin and replace the loose or missing fasteners with new fasteners, as applicable, in accordance with a method approved by the Manager, Seattle ACO, FAA.” The Transport Airplane Directorate uses a method of compliance letter to approve these requests. Method of compliance letters are not covered in the current edition of FAA Order 8110.103, Alternative Methods of Compliance (AMOC); however, the Transport Airplane Directorate uses the AMOC letter requirements of Order 8110.103 as a baseline for preparing method of compliance letters.

F. Change in Compliance Time. Section 39.19 distinguishes an AMOC from a change in compliance time when it states, “Anyone may propose to FAA an alternative method of compliance or a change in the compliance time, if the proposal provides an acceptable level of safety.” However, a change in compliance time must be requested and approved using the AMOC process.

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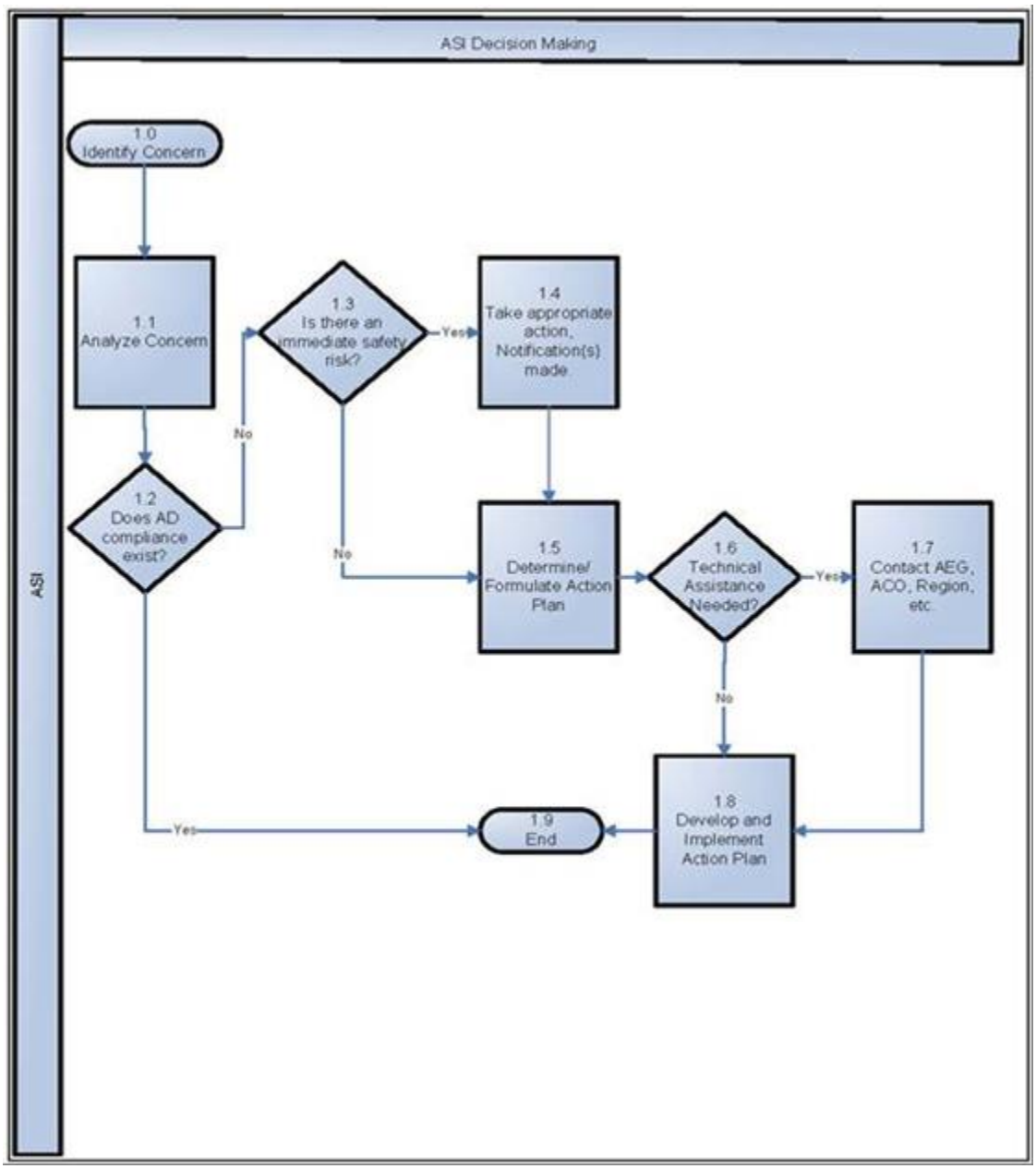
3-4868 ASI DECISIONMAKING PROCESS. See Figure 3-174, ASI Decisionmaking Regarding Airworthiness Directive Compliance, for the following steps.

Figure 3-174. ASI Decisionmaking Regarding Airworthiness Directive Compliance



A. Identify Concern (Step 1.0).

1) When ASIs suspect noncompliance with an AD, they must determine whether actual noncompliance exists. The ASI should obtain and review all documents that pertain to the area of the suspected noncompliance. Service documents may contain information to determine

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the nature and extent of an unsafe condition and what actions are required to correct the condition. ASIs should consider the following data sources:

- Copy of the complete AD, Service Information/Service Bulletin (SB), and any referenced documents. SBs may contain general notes that ASIs should review.
- Copy of any Engineering Orders (EO) or other operator or certificate holder documents that describe how the AD (or referenced document) should be accomplished.
- Minimum equipment lists (MEL)/Master Minimum Equipment Lists (MMEL).
- Copies of any AMOCs (including global AMOCs) that may have been issued for the AD.
- Copies of any maintenance records that apply.

1) If the ASIs need technical clarification or assistance to determine whether suspected AD noncompliance exists, the ASIs should first contact the AEG. The AEG will act as liaison with the ACO, and will assist the ASI to determine and understand the technical requirements of the AD.

2) After reviewing all pertinent documents and facts, the ASI must define the concern so that the matter may be appropriately analyzed under Step 1.1.

B. Analyze Concern (Step 1.1).

1) After gathering and confirming the facts in Step 1.0, ASIs must use their experience, ability, knowledge, skills, and professional judgment to analyze and assess the identified concern. By doing so, ASIs may determine the severity and impact on safety. For parts 121 and 135 certificate holders, the ASI should follow the SAS process.

2) ASIs should visually inspect the aircraft, aircraft engine, propeller, or appliance to which the suspected noncompliance applies in order to determine the exact extent or nature of the noncompliance. For example, determine if an AD was accomplished. If so, then determine if the accomplished work was unintentionally altered or partially altered.

3) When technical issues arise, ASIs should seek assistance by first contacting the appropriate AEG (Transport, Rotorcraft, Small Aircraft, Engine, and Propeller) for assistance. The field office may also coordinate with its respective region for assistance if a particular problem arises with an operator. ASIs should consider that the problem may be more widespread and could be a fleet problem that needs to be addressed at a broader level and be coordinated with the AEGs.

C. Does AD Compliance Exist? (Step 1.2). After analyzing the data from Step 1.1, the ASI should determine if noncompliance exists. If AD compliance exists, proceed to Step 1.9. However, if AD compliance does not exist, proceed to Step 1.3 to determine if there is an immediate safety risk.

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NOTE: ASIs should consult with the operator throughout the decisionmaking process. ASIs who are not on the operator's oversight certificate should also consult with the oversight ASI. When first noting the unsafe condition, the ASI should immediately contact the air carrier's station manager or any other person in the air carrier's chain of command; the responsibility for the airworthiness of the aircraft rests with the air carrier (refer to part 121, § 121.363), and they must correct any unsafe condition before the aircraft returns to service.

NOTE: Section 121.363 states, "(a) Each certificate holder is primarily responsible for—(1) The airworthiness of its aircraft, including airframes, aircraft engines, propellers, appliances, and parts thereof; and (2) The performance of the maintenance, preventive maintenance, and alteration of its aircraft, including airframes, aircraft engines, propellers, appliances, emergency equipment, and parts thereof, in accordance with its manual and the regulations of this chapter. (b) A certificate holder may make arrangements with another person for the performance of any maintenance, preventive maintenance, or alterations. However, this does not relieve the certificate holder of the responsibility specified in paragraph (a) of this section."

D. Is There an Immediate Safety Risk? (Step 1.3).

1) ASIs should consider the following questions to base their recommendations or decisions of an immediate safety risk. This list, which is not all-inclusive, will be determined on how an individual operator functions:

- Is this a single aircraft or fleet of aircraft?
- Is the concern an imminent safety hazard?
- Is the aircraft prepared and available for flight?
- Is the aircraft undergoing major overhaul?

NOTE: Analyzing the concern in Step 1.1 will assist the ASI in answering these questions.

2) The PI may use the RMP, which provides procedures to manage hazards and their associated risks. The RMP provides a means to document and track hazards, and to oversee and evaluate the disposition of associated risks to continue adjusting the risk assessment.

3) If the objective evidence shows an immediate safety risk, proceed to Step 1.4, Take Appropriate Action.

4) If the objective evidence does not show an immediate safety risk, proceed to Step 1.5, Determine/Formulate Action Plan.

NOTE: An example of determining a safety risk would be that an AD and associated manufacturer's SB called for a clamp to be installed at a specific angle or position in the aircraft wheel well. After several aircraft cycles the clamp then rotated to a position that was not in accordance with the AD and SB. This

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condition would most likely not create a safety hazard if the clamped item did not cause chafing or interfere with other lines, ducts, or clamps in the area.

E. Take Appropriate Action (Step 1.4).

1) Notification. After identifying the noncompliance as an immediate safety risk, ASIs notify the CHDO, PI, and their Front Line Manager (FLM). The responsible CHDO PI will take the steps for notification within airline management, region, AEG, ACO, and office manager.

2) Inspector Action. If the affected aircraft is allowed to continue in service, the ASI takes the appropriate steps to mitigate the safety risk. This step can be as simple as notifying responsible operator personnel (e.g., captain, station manager, and lead mechanic) of the concern and observing operator/air carrier action. The ASI may also exercise FAA authority contained in Volume 8, Chapter 5, Sections 5 and 12.

F. Determine/Formulate Action Plan (Step 1.5).

1) The CHDO PI, in collaboration with the finding ASI, will start gathering data and start formulating an action plan that would help operators bring their aircraft into compliance. The CHDO PI may elect to continue the action plan within the CHDO. In this case, the finding ASI will gather all relevant data, documents, and pictures, and provide them to the CHDO PI.

2) The CHDO PI will formulate a strategy for correction and/or mitigation. Consideration should be given to the data sources identified in Step 1.0.

3) ASIs should review all documents to determine the nature and extent of the unsafe condition and the nature and extent of the actions required to fix it. If the identified noncompliance does not affect safety, discuss with the AEG and ACO if an AMOC is appropriate.

4) CHDO PIs should contact the applicable AEG for technical assistance. The AEG acts as a subject matter expert (SME) for delegated type aircraft and will work with the applicable ACO to resolve compliance issues. If further technical clarification is needed with the content of an AD and its SBs, the AEG will act as a liaison with the appropriate ACO.

5) As information becomes available, the CHDO PI may use the RMP.

6) To understand the scope of noncompliance, ASIs should also use this step to:

a) Identify and analyze any hazards in the operator’s operating environment or systems to decide if noncompliance is an isolated incident, systemic problem, regulatory noncompliance, or airworthiness issue. Noncompliance could apply to ADs, engineering authorizations, etc.

b) Determine if the noncompliance may be more widespread (e.g., a fleet problem) that needs to be addressed at a broader level and be coordinated with the AEGs.

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c) Determine if other aircraft have been transferred or sold to another operator for possible notification concerning the AD noncompliance.

G. Technical Assistance Needed? (Step 1.6). The CHDO PI from the previous step determines what technical assistance is needed. For all aircraft engine and propeller engineering assistance, including any question over technical compliance, the AEG will be the first organization contacted to liaise with the ACO and/or the manufacturer.

H. Contact AEG, ACO, Region, etc. (Step 1.7). The CHDO PI identifies each area of expertise required and initiates the contact to gather additional data and expertise to resolve the item of concern. In highly visible situations, all parties (AEG, CHDO, and ACO) should conduct conference calls to ensure information is understood and an action plan is agreed upon.

I. Develop and Implement Action Plan (Step 1.8).

1) The CHDO PI implements corrective and/or mitigation strategies to ensure that the operator/air carrier addresses the identified hazard and unacceptable levels of risk. At this stage and after consultations, the action plan is developed, finalized, and then implemented to correct or mitigate the AD noncompliance.

2) The operator carries out the corrective action or mitigation strategy with the CHDO. This process is usually an agreed-upon methodology with the operator and the CHDO. The PI must identify the necessary actions to oversee the operator's correction or mitigation of the hazard and associated levels of risk. The PI must also track and follow up on the operator's corrective actions and should use one or more of the following tools to do so:

a) PTRS.

b) SAS. Follow guidance on the use of these tools in Volume 10.

- RMP.
- AITT.

J. Task Outcomes, Document Findings (Step 1.9).

1) Complete the PTRS Record.

a) Use the appropriate Organizational Technical Administration or Aircraft and Equipment PTRS activity code.

b) Record the activity results.

2) Complete the SAS Process. Use the appropriate SAS business processes for recording the data collection activities (see Volume 10).

NOTE: ASIs will document any other information as determined by local, regional, or national guidance.

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3) Complete Compliance and/or Enforcement Actions. Take and document other appropriate actions used to correct safety issues or deviations from a regulation or a standard.

- Compliance Action (see Volume 14, Chapter 1, Section 2, Compliance Action Decision Procedure);
- Administrative or Legal Enforcement Action, if deviations are caused by intentional, reckless, or criminal behavior, or if the person(s) is incapable, or unwilling to cooperate (see Volume 14, Chapter 1, Section 2 and FAA Order 2150.3, FAA Compliance and Enforcement Program).

3-4869 REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions):

- Advisory Circular (AC) 39-7, Airworthiness Directives.
- Aircraft Certification Service (AIR) Quality Management System (QMS) documents available on the AIR QMS Web site at https://my.faa.gov/org/linebusiness/avs/offices/air/qms/doc/master_index.html.
- FAA Order 8040.1, Airworthiness Directives.
- FAA-IR-M-8040.1, Airworthiness Directives Manual.
- FAA Order 8110.103, Alternative Methods of Compliance (AMOC) (refer to AMOCs and the 24/7 process).
- Volume 10, Safety Assurance System.
- Volume 14, Compliance and Enforcement.
- FAA Order 2150.3, FAA Compliance and Enforcement Program.

B. Forms. None.

C. Job Aids. None.

3-4870 FUTURE ACTIVITIES. If the inspectors noted deficiencies during the operator's corrective action, they should conduct followup inspections as necessary.

RESERVED. Paragraphs 3-4871 through 3-4874.

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VOLUME 3 GENERAL TECHNICAL ADMINISTRATION

CHAPTER 60 PROCEDURES FOR AVIATION SAFETY INSPECTOR DECISIONMAKING

Section 2 Safety Assurance System: Aviation Safety Inspector Surveillance Decisionmaking

3-4875 REPORTING SYSTEM(S).

A. Program Tracking and Reporting Subsystem (PTRS). For other than Title 14 of the Code of Federal Regulations (14 CFR) parts 121, 135, and 145, aviation safety inspectors (ASI) (all disciplines) should enter the appropriate surveillance code for the surveillance activity they are accomplishing (e.g., 3627 for a Maintenance Ramp Inspection). In addition, they should enter "ASIDEC" (without quotes) in the PTRS "National Use" box.

B. Safety Assurance System (SAS). Use the SAS automation and associated Data Collection Tools (DCT).

3-4876 OBJECTIVE. This section provides decisionmaking guidance to you, an ASI, when performing surveillance on air carriers, repair stations, or any operator. It also provides decisionmaking guidance for you when performing surveillance and you are unable to clearly determine the airworthiness of an operator's aircraft, engine, propeller, or component.

NOTE: For guidance regarding the ASI decisionmaking process for Airworthiness Directives (AD), see Section 1 of this chapter.

3-4877 GENERAL. The Federal Aviation Administration's (FAA) policies and procedures require all ASIs to determine what resources they need to solve difficult and controversial surveillance issues that will eliminate single-person and subjective determinations. ASIs must seek guidance from internal FAA resources, including the certificate-holding district office (CHDO), principal inspectors (PI), Front Line Managers (FLM), office managers, Aircraft Evaluation Groups (AEG), Aircraft Certification Offices (ACO), Regional Offices (RO), and/or appropriate FAA headquarters (HQ)-level branches. ASIs should rely on these resources to gather the appropriate information on which to determine proper surveillance techniques that apply using all related guidance in this order.

3-4878 INTRODUCTION. The FAA is responsible for announcing and enforcing adequate standards and regulations. Title 49 of the United States Code (49 U.S.C.) § 44702(b)(1)(A) specifies, in part, that when prescribing standards and regulations and when issuing certificates, the FAA will give full consideration to "the duty of an air carrier to provide service with the highest possible degree of safety in the public interest." Thus, you should understand that § 44702(b)(1)(A) means this responsibility rests directly with the air carrier, irrespective of any action taken, or not taken, by an FAA inspector or the FAA.

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3-4879 DEFINITIONS.

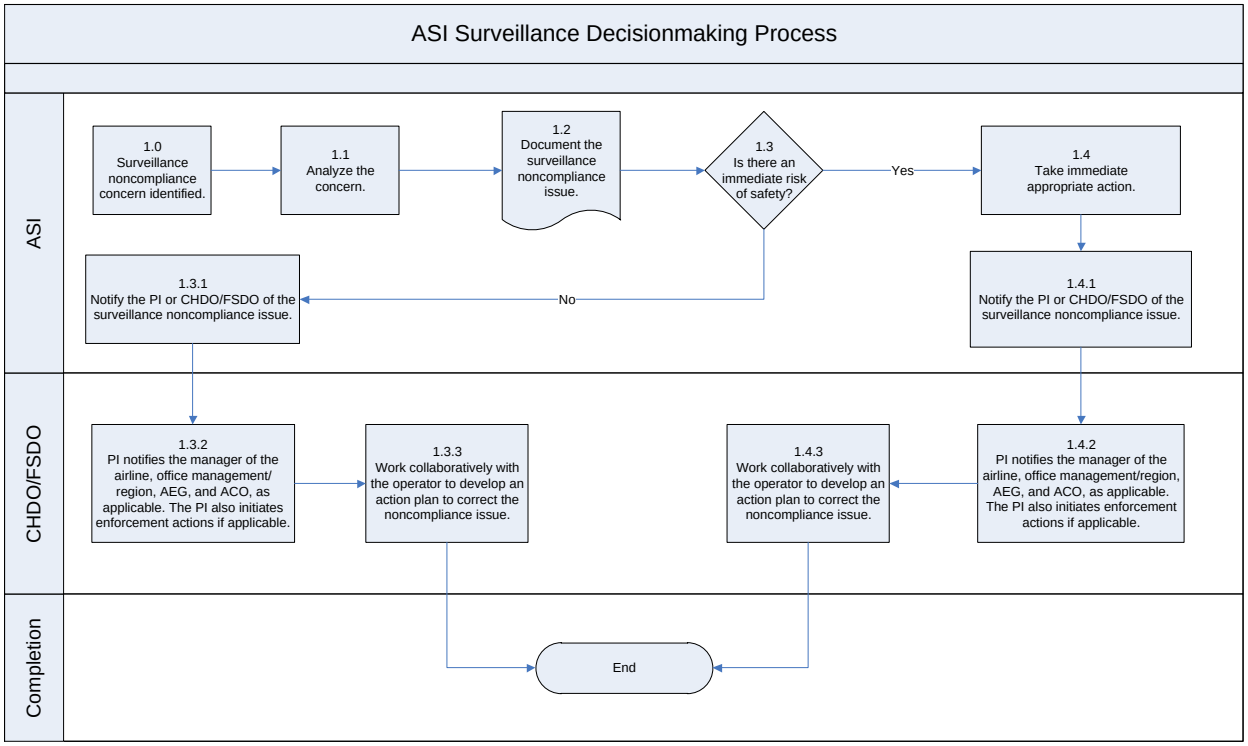
A. Airworthiness. Title 49 U.S.C. § 44704(d) best defines airworthiness by imposing a two-pronged definition. In order to be Airworthy, an aircraft must:

- Conform to its type certificate (TC), and
- Be in condition for safe operation after inspection.

B. Surveillance. The term "surveillance," as used in this order, relates to this ongoing duty and responsibility and related programs. Surveillance programs provide the FAA with a method for a continual evaluation of certificate holder compliance with 14 CFR and safe operating practices. Information generated from surveillance programs permits the FAA to act upon deficiencies and safety issues, which affect, or have a potential effect on, aviation safety.

3-4880 ASI DECISIONMAKING PROCESS. See Figure 3-184, ASI Surveillance Decisionmaking Process, for the following steps.

Figure 3-184. ASI Surveillance Decisionmaking Process



A. Surveillance Noncompliance Concern Identified (Step 1.0).

1) When you suspect noncompliance when performing surveillance activities, you must determine if an actual noncompliance exists. Obtain and review all documents and evidence that pertain to the area of the suspected noncompliance. The documents and evidence may contain information to determine the nature and extent of an unsafe condition and what actions are required to correct the condition. You should consider at least these data sources:

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- The operator's General Maintenance Manuals (GMM), General Operations Manual (GOM), and Quality Control Manual (QCM);
- The Repair Station Manual (RSM);
- Minimum equipment lists (MEL)/Master Minimum Equipment Lists (MMEL) and Configuration Deviation Lists (CDL); and
- Copies of any maintenance records that apply.

2) After reviewing all pertinent documents and facts, define the concern so you can appropriately analyze the concern in Step 1.1.

B. Analyze the Concern (Step 1.1).

1) After gathering and confirming the facts in Step 1.0, use your experience, ability, knowledge, skills, and professional judgment to analyze and assess the identified concern. By doing so, you may determine the severity and impact on safety.

2) You should visually inspect the aircraft, aircraft engine, propeller, or appliance to which the suspected noncompliance applies in order to determine the exact extent or nature of the noncompliance concern.

3) To understand the scope of noncompliance, you should also use this step to identify and analyze any hazards in the operator's operating environment or systems. This could help you decide if the noncompliance concern is an isolated incident, a systemic problem, regulatory noncompliance, or an airworthiness issue.

C. Document the Surveillance Noncompliance Concern (Step 1.2).

1) After analyzing the concern and data from the previous steps, you should determine if noncompliance exists. If the surveillance activity being conducted reveals noncompliance, you must properly document it. Proceed to Step 1.3 to determine if there is an immediate safety risk.

2) Title 14 CFR part 91, § 91.403; part 121, § 121.363; and part 135, § 135.413 state that the owner or operator/certificate holder is primarily responsible for the airworthiness of its aircraft.

D. Is there an Immediate Safety Risk? (Step 1.3).

1) You should consider the following questions to base your recommendations or decisions of an immediate safety risk. How an individual operator functions will determine this list, which is not all-inclusive:

- Is this a single aircraft or fleet of aircraft?
- Is the concern an imminent safety hazard?
- Is the aircraft undergoing maintenance?
- Is the aircraft prepared and available for flight?

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NOTE: Analyzing the noncompliance concern in Step 1.1 will assist you in answering these questions.

2) You may advise the CHDO/Flight Standards District Office (FSDO) PI to use the risk management process (RMP), which provides procedures to manage hazards and their associated risks (see Volume 10).

3) If the objective evidence does not show an immediate safety risk, proceed with Step 1.3.1, and follow through to Step 1.3.3, as appropriate.

4) If the objective evidence shows an immediate safety risk, see subparagraph H, Take Immediate Appropriate Action, and perform Step 1.4 through Step 1.4.3, as appropriate.

NOTE: An example of determining an immediate safety risk could be during a surveillance inspection. The assigned ASI finds a dent in the wing leading edge, and the aircraft is scheduled for a revenue flight. The ASI determines that the safety risk is low and informs the flightcrew of the problem. This condition would most likely not create a safety hazard if the flightcrew had the dent deferred by maintenance using the appropriate guidance prior to the aircraft departing.

E. Notify the PI or CHDO/FSDO of the Surveillance Noncompliance Concern (Step 1.3.1).

1) Notify the appropriate CHDO/FSDO, PI, and FLM of the surveillance noncompliance concern.

2) The CHDO PI, in collaboration with you, starts gathering data and starts formulating and developing an action plan to correct the noncompliance concern that would help the operator bring its aircraft into compliance.

3) As information becomes available, the PI may use the RMP to continue the risk assessment.

F. The PI Notifies the Manager of the Airline, Office Management/Region, and AEG/ACO, as Applicable (Step 1.3.2).

1) The CHDO PI identifies each area of expertise required and initiates the contact to gather additional data and expertise to resolve the noncompliance concern. In highly visible situations, all parties (i.e., AEG, CHDO, RO, and ACO) should conduct conference calls to ensure everyone understands the information and agrees on an action plan.

2) PIs should contact the applicable AEG for technical assistance. The AEG acts as a subject matter expert (SME) for delegated type aircraft and works with the applicable ACO to resolve compliance issues. If further technical clarification is necessary with the content of the noncompliance, the AEG acts as a liaison with the appropriate ACO.

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3) Determine if the noncompliance concern may be more widespread (e.g., a fleet problem) and needs to be addressed at a broader level and coordinated with the AEGs and the RO.

4) CHDO/FSDO PIs initiate enforcement action if applicable.

G. The PI Works Collaboratively with the Certificate Holder to Develop an Action Plan to Correct the Noncompliance Concern (Step 1.3.3).

1) Based on the certificate holder type, and using SAS or National Work Program Guidelines (NPG) procedures for corrective action, follow appropriate FAA order policy regarding the next steps for correction and/or mitigation to address the identified noncompliance concern.

NOTE: If necessary for action, the PI should consider the data sources identified in Step 1.0.

2) The operator carries out the corrective action with the oversight of the PI. This process is usually an agreed-upon methodology with the operator and the CHDO. The PI must identify the necessary actions to oversee the operator's correction or mitigation of the noncompliance concern and associated levels of risk. The official notification to the operator of the action plan approval should be in the form of a letter from the CHDO. The PI must also track and follow up on the operator's corrective actions, and should use one or more of the following tools to do so:

a) PTRS.

b) SAS.

- RMP.
- Action Item Training Tool (AITT).

c) Safety Performance Analysis System (SPAS).

d) Enhanced Vital Information Database (eVID).

3) The PI may elect to continue the action plan within the CHDO. In this case, you will gather all relevant data, documents, and pictures.

H. Take Immediate Appropriate Action (Step 1.4).

1) If the affected aircraft is allowed to continue in service, take the appropriate steps to mitigate the safety risk. This step can be as simple as notifying responsible operator personnel (e.g., captain, station manager, or lead mechanic) of the concern and observing operator/air carrier action. You may also exercise FAA authority contained in Volume 8, Chapter 5, Section 12.

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2) Review all documents to determine the nature and extent of the unsafe condition and the nature and extent of the actions required to correct it.

I. Notify the PI or CHDO/FSDO of the Surveillance Noncompliance Concern (Step 1.4.1).

1) After you identify the noncompliance concern as an immediate safety risk, notify the CHDO/FSDO and your FLM.

2) The CHDO PI, in collaboration with you, starts gathering data, and starts formulating and developing an action plan to correct the noncompliance concern that would help the operator bring its aircraft into compliance.

3) As information becomes available, the CHDO PI may use the RMP to continue adjusting the risk assessment (see Volume 10, Chapter 7, or Volume 6, Chapter 9).

J. The PI Notifies the Office Management/Region and AEG/ACO, as Applicable (Step 1.4.2).

1) The CHDO PI identifies each area of expertise required and initiates the contact to gather additional data and expertise to resolve the noncompliance concern. In highly visible situations, all parties (i.e., AEG, CHDO, RO, and ACO) should conduct conference calls to ensure everyone understands the information and agrees on an action plan.

2) CHDO/FSDO PIs should contact the applicable AEG for technical assistance. The AEG acts as a SME for delegated type aircraft and works with the applicable ACO to resolve compliance issues. If further technical clarification is necessary with the content of the noncompliance concern, the AEG acts as a liaison with the appropriate ACO.

3) Determine if the noncompliance concern may be more widespread (e.g., a fleet problem) and needs to be addressed at a broader level and coordinated with the AEGs.

4) CHDO/FSDO PIs initiate enforcement action if applicable.

K. The PI Works Collaboratively with the Certificate Holder to Develop an Action Plan to Correct the Noncompliance Concern (Step 1.4.3).

1) Based on the office type, and using SAS or NPG procedures for corrective action, follow appropriate FAA order policy regarding the next steps for correction and/or mitigation to address the identified noncompliance concern.

NOTE: If necessary for action, the PI should consider the data sources identified in Step 1.0.

2) The operator carries out the corrective action with the oversight of the CHDO PI. This process is usually an agreed-upon methodology with the operator and the CHDO. The PI must identify the necessary actions to oversee the operator's correction or mitigation of the noncompliance concern and associated levels of risk. The official notification to the operator of

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the action plan approval should be in the form of a letter from the CHDO. The PI must also track and follow up on the operator's corrective actions, and should use one or more of the following tools to do so:

a) PTRS.

b) SAS.

- RMP.
- AITT.

c) SPAS.

d) eVID.

3) The CHDO PI may elect to continue the action plan within the CHDO. In this case, you will gather all relevant data, documents, and pictures, and provide them to the CHDO PI.

L. Task Outcomes, Project Completion.

1) Complete the PTRS Record. For other than parts 121, 135, or 145:

a) Use the appropriate surveillance PTRS activity code.

b) Record the activity results.

c) Enter "ASIDEC" (without quotes) in the PTRS "National Use" box.

2) Complete in SAS Automation. For parts 121, 135, and 145, follow SAS guidance found in Volume 10, Chapter 5.

3) Complete Enforcement Actions. Complete any enforcement actions, as appropriate (refer to the current edition of FAA Order 2150.3, FAA Compliance and Enforcement Program).

3-4881 REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions):

- eVID.
- FAA Order 2150.3, FAA Compliance and Enforcement Program.
- FAA Order 1800.56, National Flight Standards Work Program Guidelines.
- PTRS.
- SPAS.
- Volume 6, Surveillance.
- Volume 10, Safety Assurance System Policy and Procedures.

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B. Forms. None.

C. Job Aids.

1) See the Flight Standards Evaluation Program (FSEP) applicable job aids listed below:

- 44709 Re-Examination (709).
- Advanced Qualification Program (AQP).
- Air Transportation Designee (ATD).
- Aviation Event Waivers/Authorizations Job Aid (AVENT).
- Aviation Safety Action Program (ASAP).
- Check Airmen (CHKA).
- Continuing Analysis and Surveillance System (CASS).
- European Aviation Safety Agency Supplement (EASA).
- Flight Crewmember Training Program (FCT).
- General Aviation Designees (GAD).
- General Process (GEN PRO).
- Minimum Equipment List (MEL).
- Operations Specifications (OPSS).
- Part 129 (129).
- Part 142 Training Center (PT142).
- Part 145 (PT145).
- Pilot Deviation Investigation (PD).
- Voluntary Disclosure Reporting Program (VDRP).

2) Please use the General Process job aid if no other job aid is applicable.

3) You can access the current editions of these job aids at https://my.faa.gov/org/linebusiness/avs/offices/afs/programs/fsep/job_aids.html.

3-4882 FUTURE ACTIVITIES. For parts 121, 135, and 145 follow Volume 10 to conduct followup action or to plan future risk-based surveillance in SAS. For all other certificate holders, schedule normal surveillance as required.

RESERVED. Paragraphs 3-4883 through 3-4886.

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VOLUME 3 GENERAL TECHNICAL ADMINISTRATION

CHAPTER 60 PROCEDURES FOR AVIATION SAFETY INSPECTOR DECISIONMAKING

Section 1 Safety Assurance System: Aviation Safety Inspector Surveillance Decisionmaking

3-4875 REPORTING SYSTEM(S).

A. Program Tracking and Reporting Subsystem (PTRS). For other than Title 14 of the Code of Federal Regulations (14 CFR) parts 121, 135, and 145, aviation safety inspectors (ASI) (all disciplines) should enter the appropriate surveillance code for the surveillance activity they are accomplishing (e.g., 3627 for a Maintenance Ramp Inspection). In addition, they should enter "ASIDEC" (without quotes) in the PTRS "National Use" box.

B. Safety Assurance System (SAS). Use the SAS automation and associated Data Collection Tools (DCT).

3-4876 OBJECTIVE. This section provides decisionmaking guidance to you, an ASI, when performing surveillance on air carriers, repair stations, or any operator. It also provides decisionmaking guidance for you when performing surveillance and you are unable to clearly determine the airworthiness of an operator's aircraft, engine, propeller, or component.

NOTE: For guidance regarding the ASI decisionmaking process for Airworthiness Directives (AD), see Section 1 of this chapter.

3-4877 GENERAL. The Federal Aviation Administration's (FAA) policies and procedures require all ASIs to determine what resources they need to solve difficult and controversial surveillance issues that will eliminate single-person and subjective determinations. ASIs must seek guidance from internal FAA resources, including the certificate-holding district office (CHDO), principal inspectors (PI), Front Line Managers (FLM), office managers, Aircraft Evaluation Groups (AEG), Aircraft Certification Offices (ACO), Regional Offices (RO), and/or appropriate FAA headquarters (HQ)-level branches. ASIs should rely on these resources to gather the appropriate information on which to determine proper surveillance techniques that apply using all related guidance in this order.

3-4878 INTRODUCTION. The FAA is responsible for announcing and enforcing adequate standards and regulations. Title 49 of the United States Code (49 U.S.C.) § 44702(b)(1)(A) specifies, in part, that when prescribing standards and regulations and when issuing certificates, the FAA will give full consideration to "the duty of an air carrier to provide service with the highest possible degree of safety in the public interest." Thus, you should understand that § 44702(b)(1)(A) means this responsibility rests directly with the air carrier, irrespective of any action taken, or not taken, by an FAA inspector or the FAA.

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3-4879 DEFINITIONS.

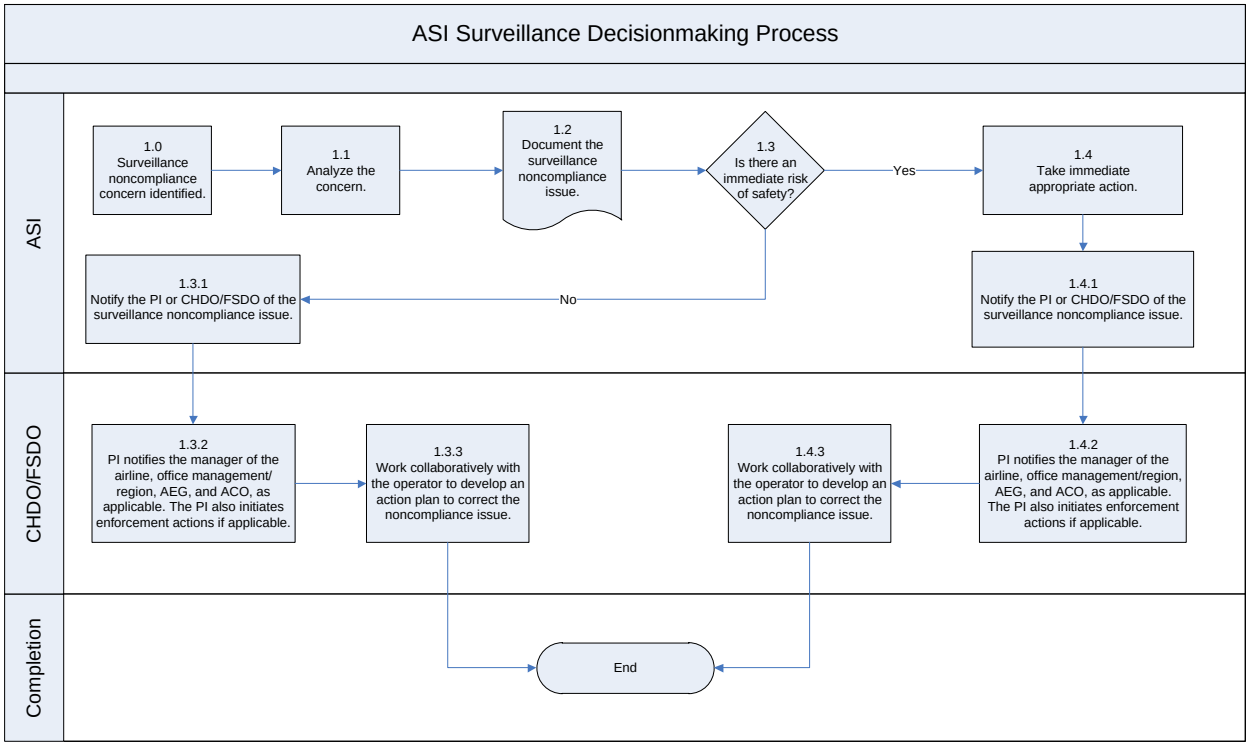
A. Airworthiness. Title 49 U.S.C. § 44704(d) best defines airworthiness by imposing a two-pronged definition. In order to be Airworthy, an aircraft must:

- Conform to its type certificate (TC), and
- Be in condition for safe operation after inspection.

B. Surveillance. The term "surveillance," as used in this order, relates to this ongoing duty and responsibility and related programs. Surveillance programs provide the FAA with a method for a continual evaluation of certificate holder compliance with 14 CFR and safe operating practices. Information generated from surveillance programs permits the FAA to act upon deficiencies and safety issues, which affect, or have a potential effect on, aviation safety.

3-4880 ASI DECISIONMAKING PROCESS. See Figure 3-184, ASI Surveillance Decisionmaking Process, for the following steps.

Figure 3-184. ASI Surveillance Decisionmaking Process



A. Surveillance Noncompliance Concern Identified (Step 1.0).

1) When you suspect noncompliance when performing surveillance activities, you must determine if an actual noncompliance exists. Obtain and review all documents and evidence that pertain to the area of the suspected noncompliance. The documents and evidence may contain information to determine the nature and extent of an unsafe condition and what actions are required to correct the condition. You should consider at least these data sources:

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- The operator's General Maintenance Manuals (GMM), General Operations Manual (GOM), and Quality Control Manual (QCM);
- The Repair Station Manual (RSM);
- Minimum equipment lists (MEL)/Master Minimum Equipment Lists (MMEL) and Configuration Deviation Lists (CDL); and
- Copies of any maintenance records that apply.

2) After reviewing all pertinent documents and facts, define the concern so you can appropriately analyze the concern in Step 1.1.

B. Analyze the Concern (Step 1.1).

1) After gathering and confirming the facts in Step 1.0, use your experience, ability, knowledge, skills, and professional judgment to analyze and assess the identified concern. By doing so, you may determine the severity and impact on safety.

2) You should visually inspect the aircraft, aircraft engine, propeller, or appliance to which the suspected noncompliance applies in order to determine the exact extent or nature of the noncompliance concern.

3) To understand the scope of noncompliance, you should also use this step to identify and analyze any hazards in the operator's operating environment or systems. This could help you decide if the noncompliance concern is an isolated incident, a systemic problem, regulatory noncompliance, or an airworthiness issue.

C. Document the Surveillance Noncompliance Concern (Step 1.2).

1) After analyzing the concern and data from the previous steps, you should determine if noncompliance exists. If the surveillance activity being conducted reveals noncompliance, you must properly document it. Proceed to Step 1.3 to determine if there is an immediate safety risk.

2) Title 14 CFR part 91, § 91.403; part 121, § 121.363; and part 135, § 135.413 state that the owner or operator/certificate holder is primarily responsible for the airworthiness of its aircraft.

D. Is there an Immediate Safety Risk? (Step 1.3).

1) You should consider the following questions to base your recommendations or decisions of an immediate safety risk. How an individual operator functions will determine this list, which is not all-inclusive:

- Is this a single aircraft or fleet of aircraft?
- Is the concern an imminent safety hazard?
- Is the aircraft undergoing maintenance?
- Is the aircraft prepared and available for flight?

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NOTE: Analyzing the noncompliance concern in Step 1.1 will assist you in answering these questions.

2) You may advise the CHDO/Flight Standards District Office (FSDO) PI to use the risk management process (RMP), which provides procedures to manage hazards and their associated risks (see Volume 10).

3) If the objective evidence does not show an immediate safety risk, proceed with Step 1.3.1, and follow through to Step 1.3.3, as appropriate.

4) If the objective evidence shows an immediate safety risk, see subparagraph H, Take Immediate Appropriate Action, and perform Step 1.4 through Step 1.4.3, as appropriate.

NOTE: An example of determining an immediate safety risk could be during a surveillance inspection. The assigned ASI finds a dent in the wing leading edge, and the aircraft is scheduled for a revenue flight. The ASI determines that the safety risk is low and informs the flightcrew of the problem. This condition would most likely not create a safety hazard if the flightcrew had the dent deferred by maintenance using the appropriate guidance prior to the aircraft departing.

E. Notify the PI or CHDO/FSDO of the Surveillance Noncompliance Concern (Step 1.3.1).

1) Notify the appropriate CHDO/FSDO, PI, and FLM of the surveillance noncompliance concern.

2) The CHDO PI, in collaboration with you, starts gathering data and starts formulating and developing an action plan to correct the noncompliance concern that would help the operator bring its aircraft into compliance.

3) As information becomes available, the PI may use the RMP to continue the risk assessment.

F. The PI Notifies the Manager of the Airline, Office Management/Region, and AEG/ACO, as Applicable (Step 1.3.2).

1) The CHDO PI identifies each area of expertise required and initiates the contact to gather additional data and expertise to resolve the noncompliance concern. In highly visible situations, all parties (i.e., AEG, CHDO, RO, and ACO) should conduct conference calls to ensure everyone understands the information and agrees on an action plan.

2) PIs should contact the applicable AEG for technical assistance. The AEG acts as a subject matter expert (SME) for delegated type aircraft and works with the applicable ACO to resolve compliance issues. If further technical clarification is necessary with the content of the noncompliance, the AEG acts as a liaison with the appropriate ACO.

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3) Determine if the noncompliance concern may be more widespread (e.g., a fleet problem) and needs to be addressed at a broader level and coordinated with the AEGs and the RO.

4) CHDO/FSDO PIs initiate enforcement action if applicable.

G. The PI Works Collaboratively with the Certificate Holder to Develop an Action Plan to Correct the Noncompliance Concern (Step 1.3.3).

1) Based on the certificate holder type, and using SAS or National Work Program Guidelines (NPG) procedures for corrective action, follow appropriate FAA order policy regarding the next steps for correction and/or mitigation to address the identified noncompliance concern.

NOTE: If necessary for action, the PI should consider the data sources identified in Step 1.0.

2) The operator carries out the corrective action with the oversight of the PI. This process is usually an agreed-upon methodology with the operator and the CHDO. The PI must identify the necessary actions to oversee the operator's correction or mitigation of the noncompliance concern and associated levels of risk. The official notification to the operator of the action plan approval should be in the form of a letter from the CHDO. The PI must also track and follow up on the operator's corrective actions, and should use one or more of the following tools to do so:

a) PTRS.

b) SAS.

- RMP.
- Action Item Training Tool (AITT).

c) Safety Performance Analysis System (SPAS).

d) Enhanced Vital Information Database (eVID).

3) The PI may elect to continue the action plan within the CHDO. In this case, you will gather all relevant data, documents, and pictures.

H. Take Immediate Appropriate Action (Step 1.4).

1) If the affected aircraft is allowed to continue in service, take the appropriate steps to mitigate the safety risk. This step can be as simple as notifying responsible operator personnel (e.g., captain, station manager, or lead mechanic) of the concern and observing operator/air carrier action. You may also exercise FAA authority contained in Volume 8, Chapter 5, Section 12.

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2) Review all documents to determine the nature and extent of the unsafe condition and the nature and extent of the actions required to correct it.

I. Notify the PI or CHDO/FSDO of the Surveillance Noncompliance Concern (Step 1.4.1).

1) After you identify the noncompliance concern as an immediate safety risk, notify the CHDO/FSDO and your FLM.

2) The CHDO PI, in collaboration with you, starts gathering data, and starts formulating and developing an action plan to correct the noncompliance concern that would help the operator bring its aircraft into compliance.

3) As information becomes available, the CHDO PI may use the RMP to continue adjusting the risk assessment (see Volume 10, Chapter 7, or Volume 6, Chapter 9).

J. The PI Notifies the Office Management/Region and AEG/ACO, as Applicable (Step 1.4.2).

1) The CHDO PI identifies each area of expertise required and initiates the contact to gather additional data and expertise to resolve the noncompliance concern. In highly visible situations, all parties (i.e., AEG, CHDO, RO, and ACO) should conduct conference calls to ensure everyone understands the information and agrees on an action plan.

2) CHDO/FSDO PIs should contact the applicable AEG for technical assistance. The AEG acts as a SME for delegated type aircraft and works with the applicable ACO to resolve compliance issues. If further technical clarification is necessary with the content of the noncompliance concern, the AEG acts as a liaison with the appropriate ACO.

3) Determine if the noncompliance concern may be more widespread (e.g., a fleet problem) and needs to be addressed at a broader level and coordinated with the AEGs.

4) CHDO/FSDO PIs initiate enforcement action if applicable.

K. The PI Works Collaboratively with the Certificate Holder to Develop an Action Plan to Correct the Noncompliance Concern (Step 1.4.3).

1) Based on the office type, and using SAS or NPG procedures for corrective action, follow appropriate FAA order policy regarding the next steps for correction and/or mitigation to address the identified noncompliance concern.

NOTE: If necessary for action, the PI should consider the data sources identified in Step 1.0.

2) The operator carries out the corrective action with the oversight of the CHDO PI. This process is usually an agreed-upon methodology with the operator and the CHDO. The PI must identify the necessary actions to oversee the operator's correction or mitigation of the noncompliance concern and associated levels of risk. The official notification to the operator of

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the action plan approval should be in the form of a letter from the CHDO. The PI must also track and follow up on the operator's corrective actions, and should use one or more of the following tools to do so:

a) PTRS.

b) SAS.

- RMP.
- AITT.

c) SPAS.

d) eVID.

3) The CHDO PI may elect to continue the action plan within the CHDO. In this case, you will gather all relevant data, documents, and pictures, and provide them to the CHDO PI.

L. Task Outcomes, Project Completion.

1) Complete the PTRS Record. For other than parts 121, 135, or 145:

a) Use the appropriate surveillance PTRS activity code.

b) Record the activity results.

c) Enter "ASIDEC" (without quotes) in the PTRS "National Use" box.

2) Complete in SAS Automation. For parts 121, 135, and 145, follow SAS guidance found in Volume 10, Chapter 5.

3) Complete Enforcement Actions. Complete any enforcement actions, as appropriate (refer to the current edition of FAA Order 2150.3, FAA Compliance and Enforcement Program).

3-4881 REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions):

- eVID.
- FAA Order 2150.3, FAA Compliance and Enforcement Program.
- FAA Order 1800.56, National Flight Standards Work Program Guidelines.
- PTRS.
- SPAS.
- Volume 6, Surveillance.
- Volume 10, Safety Assurance System Policy and Procedures.

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B. Forms. None.

C. Job Aids.

1) See the Flight Standards Evaluation Program (FSEP) applicable job aids listed below:

- 44709 Re-Examination (709).
- Advanced Qualification Program (AQP).
- Air Transportation Designee (ATD).
- Aviation Event Waivers/Authorizations Job Aid (AVENT).
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- Check Airmen (CHKA).
- Continuing Analysis and Surveillance System (CASS).
- European Aviation Safety Agency Supplement (EASA).
- Flight Crewmember Training Program (FCT).
- General Aviation Designees (GAD).
- General Process (GEN PRO).
- Minimum Equipment List (MEL).
- Operations Specifications (OPSS).
- Part 129 (129).
- Part 142 Training Center (PT142).
- Part 145 (PT145).
- Pilot Deviation Investigation (PD).
- Voluntary Disclosure Reporting Program (VDRP).

2) Please use the General Process job aid if no other job aid is applicable.

3) You can access the current editions of these job aids at https://my.faa.gov/org/linebusiness/avs/offices/afs/programs/fsep/job_aids.html.

3-4882 FUTURE ACTIVITIES. For parts 121, 135, and 145 follow Volume 10 to conduct followup action or to plan future risk-based surveillance in SAS. For all other certificate holders, schedule normal surveillance as required.

RESERVED. Paragraphs 3-4883 through 3-4886.

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VOLUME 3 GENERAL TECHNICAL ADMINISTRATION

CHAPTER 60 PROCEDURES FOR AVIATION SAFETY INSPECTOR DECISIONMAKING

Section 2 Safety Assurance System: Aviation Safety Inspector Surveillance Decisionmaking

3-4875 REPORTING SYSTEM(S).

A. Program Tracking and Reporting Subsystem (PTRS). For other than Title 14 of the Code of Federal Regulations (14 CFR) parts 121, 135, and 145, aviation safety inspectors (ASI) (all disciplines) should enter the appropriate surveillance code for the surveillance activity they are accomplishing (e.g., 3627 for a Maintenance Ramp Inspection). In addition, they should enter "ASIDEC" (without quotes) in the PTRS "National Use" box.

B. Safety Assurance System (SAS). Use the SAS automation and associated Data Collection Tools (DCT).

3-4876 OBJECTIVE. This section provides decisionmaking guidance to you, an ASI, when performing surveillance on air carriers, repair stations, or any operator. It also provides decisionmaking guidance for you when performing surveillance and you are unable to clearly determine the airworthiness of an operator's aircraft, engine, propeller, or component.

NOTE: For guidance regarding the ASI decisionmaking process for Airworthiness Directives (AD), see Section 1 of this chapter.

3-4877 GENERAL. The Federal Aviation Administration's (FAA) policies and procedures require all ASIs to determine what resources they need to solve difficult and controversial surveillance issues that will eliminate single-person and subjective determinations. ASIs must seek guidance from internal FAA resources, including the certificate-holding district office (CHDO), principal inspectors (PI), Front Line Managers (FLM), office managers, Aircraft Evaluation Groups (AEG), Aircraft Certification Offices (ACO), Regional Offices (RO), and/or appropriate FAA headquarters (HQ)-level branches. ASIs should rely on these resources to gather the appropriate information on which to determine proper surveillance techniques that apply using all related guidance in this order.

3-4878 INTRODUCTION. The FAA is responsible for announcing and enforcing adequate standards and regulations. Title 49 of the United States Code (49 U.S.C.) § 44702(b)(1)(A) specifies, in part, that when prescribing standards and regulations and when issuing certificates, the FAA will give full consideration to "the duty of an air carrier to provide service with the highest possible degree of safety in the public interest." Thus, you should understand that § 44702(b)(1)(A) means this responsibility rests directly with the air carrier, irrespective of any action taken, or not taken, by an FAA inspector or the FAA.

3-4879 DEFINITIONS.

A. Airworthiness. Title 49 U.S.C. § 44704(d) best defines airworthiness by imposing a two-pronged definition. In order to be Airworthy, an aircraft must:

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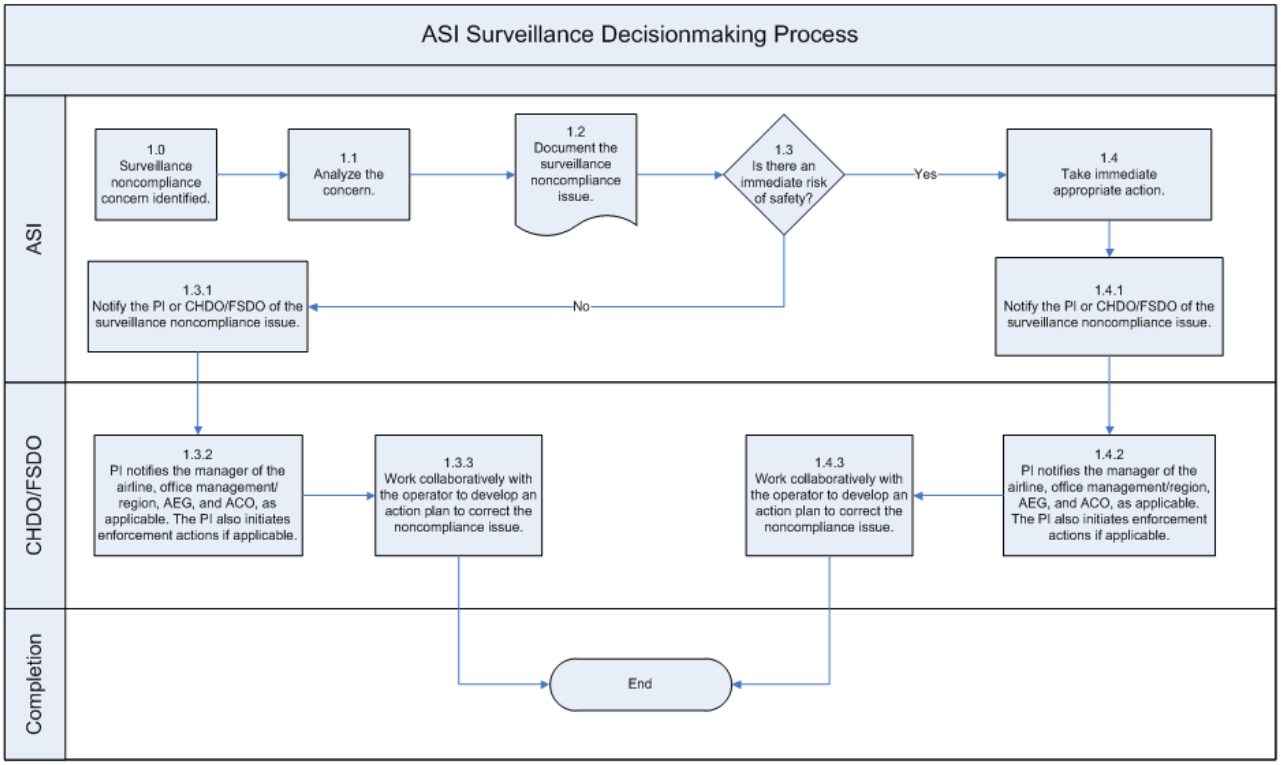
- Conform to its type certificate (TC), and
- Be in condition for safe operation after inspection.

B. Surveillance. The term "surveillance," as used in this order, relates to this ongoing duty and responsibility and related programs. Surveillance programs provide the FAA with a method for a continual evaluation of certificate holder compliance with 14 CFR and safe operating practices. Information generated from surveillance programs permits the FAA to act upon deficiencies and safety issues, which affect, or have a potential effect on, aviation safety.

3-4880 ASI DECISIONMAKING PROCESS. See Figure 3-184, ASI Surveillance Decisionmaking Process, for the following steps.

Figure 3-184. ASI Surveillance Decisionmaking Process



A. Surveillance Noncompliance Concern Identified (Step 1.0).

1) When you suspect noncompliance when performing surveillance activities, you must determine if an actual noncompliance exists. Obtain and review all documents and evidence that pertain to the area of the suspected noncompliance. The documents and evidence may contain information to determine the nature and extent of an unsafe condition and what actions are required to correct the condition. You should consider at least these data sources:

- The operator's General Maintenance Manuals (GMM), General Operations Manual (GOM), and Quality Control Manual (QCM);
- The Repair Station Manual (RSM);

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- Minimum equipment lists (MEL)/Master Minimum Equipment Lists (MMEL) and Configuration Deviation Lists (CDL); and
- Copies of any maintenance records that apply.

2) After reviewing all pertinent documents and facts, define the concern so you can appropriately analyze the concern in Step 1.1.

B. Analyze the Concern (Step 1.1).

1) After gathering and confirming the facts in Step 1.0, use your experience, ability, knowledge, skills, and professional judgment to analyze and assess the identified concern. By doing so, you may determine the severity and impact on safety.

2) You should visually inspect the aircraft, aircraft engine, propeller, or appliance to which the suspected noncompliance applies in order to determine the exact extent or nature of the noncompliance concern.

3) To understand the scope of noncompliance, you should also use this step to identify and analyze any hazards in the operator's operating environment or systems. This could help you decide if the noncompliance concern is an isolated incident, a systemic problem, regulatory noncompliance, or an airworthiness issue.

C. Document the Surveillance Noncompliance Concern (Step 1.2).

1) After analyzing the concern and data from the previous steps, you should determine if noncompliance exists. If the surveillance activity being conducted reveals noncompliance, you must properly document it. Proceed to Step 1.3 to determine if there is an immediate safety risk.

2) Title 14 CFR part 91, § 91.403; part 121, § 121.363; and part 135, § 135.413 state that the owner or operator/certificate holder is primarily responsible for the airworthiness of its aircraft.

D. Is There an Immediate Safety Risk? (Step 1.3).

1) You should consider the following questions to base your recommendations or decisions of an immediate safety risk. How an individual operator functions will determine this list, which is not all-inclusive:

- Is this a single aircraft or fleet of aircraft?
- Is the concern an imminent safety hazard?
- Is the aircraft undergoing maintenance?
- Is the aircraft prepared and available for flight?

NOTE: Analyzing the noncompliance concern in Step 1.1 will assist you in answering these questions.

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2) You may advise the CHDO/Flight Standards District Office (FSDO) PI to use the risk management process (RMP), which provides procedures to manage hazards and their associated risks (see Volume 10).

3) If the objective evidence does not show an immediate safety risk, proceed with Step 1.3.1 and follow through to Step 1.3.3, as appropriate.

4) If the objective evidence shows an immediate safety risk, see subparagraph 3-4880H, Take Immediate Appropriate Action (Step 1.4), and perform Step 1.4 through Step 1.4.3, as appropriate.

NOTE: An example of determining an immediate safety risk could be during a surveillance inspection. The assigned ASI finds a dent in the wing leading edge, and the aircraft is scheduled for a revenue flight. The ASI determines that the safety risk is low and informs the flightcrew of the problem. This condition would most likely not create a safety hazard if the flightcrew had the dent deferred by maintenance using the appropriate guidance prior to the aircraft departing.

E. Notify the PI or CHDO/FSDO of the Surveillance Noncompliance Concern (Step 1.3.1).

1) Notify the appropriate CHDO/FSDO, PI, and FLM of the surveillance noncompliance concern.

2) The CHDO PI, in collaboration with you, starts gathering data and starts formulating and developing an action plan to correct the noncompliance concern that would help the operator bring its aircraft into compliance.

3) As information becomes available, the PI may use the RMP to continue the risk assessment.

F. The PI Notifies the Manager of the Airline, Office Management/Region, and AEG/ACO, as Applicable (Step 1.3.2).

1) The CHDO PI identifies each area of expertise required and initiates the contact to gather additional data and expertise to resolve the noncompliance concern. In highly visible situations, all parties (i.e., AEG, CHDO, RO, and ACO) should conduct conference calls to ensure everyone understands the information and agrees on an action plan.

2) PIs should contact the applicable AEG for technical assistance. The AEG acts as a subject matter expert (SME) for delegated type aircraft and works with the applicable ACO to resolve compliance issues. If further technical clarification is necessary with the content of the noncompliance, the AEG acts as a liaison with the appropriate ACO.

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3) Determine if the noncompliance concern may be more widespread (e.g., a fleet problem) and needs to be addressed at a broader level and coordinated with the AEGs and the RO.

4) CHDO/FSDO PIs initiate enforcement action, if applicable.

G. The PI Works Collaboratively with the Certificate Holder to Develop an Action Plan to Correct the Noncompliance Concern (Step 1.3.3).

1) Based on the certificate holder type, and using SAS or National Work Program Guidelines (NPG) procedures for corrective action, follow appropriate FAA order policy regarding the next steps for correction and/or mitigation to address the identified noncompliance concern.

NOTE: If necessary for action, the PI should consider the data sources identified in Step 1.0.

2) The operator carries out the corrective action with the oversight of the PI. This process is usually an agreed-upon methodology with the operator and the CHDO. The PI must identify the necessary actions to oversee the operator's correction or mitigation of the noncompliance concern and associated levels of risk. The official notification to the operator of the action plan approval should be in the form of a letter from the CHDO. The PI must also track and follow up on the operator's corrective actions, and should use one or more of the following tools to do so:

a) PTRS.

b) SAS.

- RMP.
- Action Item Tracking Tool (AITT).

c) Safety Performance Analysis System (SPAS).

d) Enhanced Vital Information Database (eVID).

3) The PI may elect to continue the action plan within the CHDO. In this case, you will gather all relevant data, documents, and pictures.

H. Take Immediate Appropriate Action (Step 1.4).

1) If the affected aircraft is allowed to continue in service, take the appropriate steps to mitigate the safety risk. This step can be as simple as notifying responsible operator personnel (e.g., captain, station manager, or lead mechanic) of the concern and observing operator/air carrier action. You may also exercise FAA authority contained in Volume 8, Chapter 5, Section 12.

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2) Review all documents to determine the nature and extent of the unsafe condition and the nature and extent of the actions required to correct it.

I. Notify the PI or CHDO/FSDO of the Surveillance Noncompliance Concern (Step 1.4.1).

1) After you identify the noncompliance concern as an immediate safety risk, notify the CHDO/FSDO and your FLM.

2) The CHDO PI, in collaboration with you, starts gathering data, and starts formulating and developing an action plan to correct the noncompliance concern that would help the operator bring its aircraft into compliance.

3) As information becomes available, the CHDO PI may use the RMP to continue adjusting the risk assessment (see Volume 10, Chapter 7, or Volume 6, Chapter 9).

J. The PI Notifies the Office Management/Region and AEG/ACO, as Applicable (Step 1.4.2).

1) The CHDO PI identifies each area of expertise required and initiates the contact to gather additional data and expertise to resolve the noncompliance concern. In highly visible situations, all parties (i.e., AEG, CHDO, RO, and ACO) should conduct conference calls to ensure everyone understands the information and agrees on an action plan.

2) CHDO/FSDO PIs should contact the applicable AEG for technical assistance. The AEG acts as a SME for delegated type aircraft and works with the applicable ACO to resolve compliance issues. If further technical clarification is necessary with the content of the noncompliance concern, the AEG acts as a liaison with the appropriate ACO.

3) Determine if the noncompliance concern may be more widespread (e.g., a fleet problem) and needs to be addressed at a broader level and coordinated with the AEGs.

4) CHDO/FSDO PIs initiate enforcement action, if applicable.

K. The PI Works Collaboratively with the Certificate Holder to Develop an Action Plan to Correct the Noncompliance Concern (Step 1.4.3).

1) Based on the office type, and using SAS or NPG procedures for corrective action, follow appropriate FAA order policy regarding the next steps for correction and/or mitigation to address the identified noncompliance concern.

NOTE: If necessary for action, the PI should consider the data sources identified in Step 1.0.

2) The operator carries out the corrective action with the oversight of the CHDO PI. This process is usually an agreed-upon methodology with the operator and the CHDO. The PI must identify the necessary actions to oversee the operator's correction or mitigation of the noncompliance concern and associated levels of risk. The official notification to the operator of

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the action plan approval should be in the form of a letter from the CHDO. The PI must also track and follow up on the operator's corrective actions, and should use one or more of the following tools to do so:

a) PTRS.

b) SAS.

- RMP.
- AITT.

c) SPAS.

d) eVID.

3) The CHDO PI may elect to continue the action plan within the CHDO. In this case, you will gather all relevant data, documents, and pictures, and provide them to the CHDO PI.

L. Task Outcomes, Project Completion.

1) Complete the PTRS Record. For other than parts 121, 135, or 145:

a) Use the appropriate surveillance PTRS activity code.

b) Record the activity results.

c) Enter "ASIDEC" (without quotes) in the PTRS "National Use" box.

2) Complete in SAS Automation. For parts 121, 135, and 145, follow SAS guidance found in Volume 10, Chapter 5.

3) Complete Compliance and/or Enforcement Actions. Take and document other appropriate actions used to correct safety issues or deviations from a regulation or a standard.

a) Compliance Action (see Volume 14, Chapter 1, Section 2).

b) Administrative or Legal Enforcement Action, if deviations are caused by intentional, reckless, or criminal behavior, or if the person(s) is incapable of, or unwilling to, cooperate (see Volume 14, Chapter 1, Section 2 and refer to the current edition of FAA Order 2150.3, FAA Compliance and Enforcement Program).

3-4881 REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions):

- eVID.
- PTRS.

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- SPAS.
- FAA Order 1800.56, National Flight Standards Work Program Guidelines.
- FAA Order 2150.3, FAA Compliance and Enforcement Program.
- Volume 6, Surveillance.
- Volume 10, Safety Assurance System Policy and Procedures.
- Volume 14, Compliance and Enforcement.

B. Forms. None.

C. Job Aids.

1) Refer to the Flight Standards Evaluation Program (FSEP) applicable job aids listed below:

- 44709 Re-Examination (709).
- Advanced Qualification Program (AQP).
- Air Transportation Designee (ATD).
- Aviation Event Waivers/Authorizations Job Aid (AVENT).
- Aviation Safety Action Program (ASAP).
- Check Airmen (CHKA).
- Continuing Analysis and Surveillance System (CASS).
- European Aviation Safety Agency Supplement to Repair Stations (EASA).
- Flight Crewmember Training Program (FCT).
- General Aviation Designees (GAD).
- General Process (GEN PRO).
- Minimum Equipment List (MEL).
- Operations Specifications (OPSS).
- Part 129 (129).
- Part 142 Training Center (PT142).
- Part 145 (PT145).
- Pilot Deviation Investigation (PD).
- Voluntary Disclosure Reporting Program (VDRP).

2) Please use the General Process job aid if no other job aid is applicable.

3) You can access the current editions of these job aids at https://my.faa.gov/org/linebusiness/avs/offices/afs/programs/fsep/job_aids.html.

3-4882 FUTURE ACTIVITIES. For parts 121, 135, and 145 follow Volume 10 to conduct followup action or to plan future risk-based surveillance in SAS. For all other certificate holders, schedule normal surveillance as required.

RESERVED. Paragraphs 3-4883 through 3-4886.

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VOLUME 4 AIRCRAFT EQUIPMENT AND OPERATIONAL AUTHORIZATION

CHAPTER 2 ALL WEATHER TERMINAL AREA OPERATIONS

Section 6 Safety Assurance System: Category II Operations

4-300 OVERVIEW. This section contains concepts, direction, and guidance to be used by principal inspectors (PI) for evaluating and approving or denying requests for authorization to conduct Special Authorization (SA) Category (CAT) I, CAT II, CAT II (Runway Visual Range (RVR) 1000), and SA CAT II operations. This includes all SA CAT I, CAT II, CAT II (RVR 1000), and SA CAT II operations at airports and runways new to an operator/program manager, even though previously approved aircraft, airborne equipment, ground-based equipment, concepts, and procedures are being used in these operations. Although SA CAT I is not a CAT II operation, it is included in this section because it requires CAT II authorization using an approved CAT II or III Head-Up Display (HUD) to decision height (DH). Additional information may be found in Volume 4, Chapter 2, Section 1.

4-301 APPLICABILITY. The intent is that the PI will use the general information provided in this section, along with the specific information provided in Volume 4, Chapter 2, Section 2 for domestic operators and Volume 4, Chapter 2, Section 8 for Title 14 of the Code of Federal Regulations (14 CFR) part 129 foreign air carriers, when evaluating requests for SA CAT I, CAT II, and SA CAT II operations. This process is only applicable for operator requests for instrument landing system (ILS)-based CAT II operations. Requests for other than ILS-based CAT II should be forwarded to the Regional Flight Standards Division (RFSD) Next Generation (NextGen) Branch (AXX-220). Volume 4, Chapter 2, Section 3, contains the requirements to authorize a small Category A aircraft for CAT II operations.

4-302 REPORTING SYSTEMS.

A. Safety Assurance System (SAS). For parts 121 and 135 operations the PI will utilize SAS Data Collection Tools (DCT) 2.2.2, Category II & III Ops, and 2.3.1, Appropriate Operational Equipment.

B. Program Tracking and Reporting Subsystem (PTRS). For parts 91, 91 subpart K (91K), 125, and 129 operations the PI will utilize Program Tracking and Reporting Subsystem (PTRS) activity codes.

- CAT II/III ILS Operations Phase I Approval: 1430.
- CAT II/III ILS Operations Phase II Approval: 1431.
- CAT II/III ILS Operations Phase III Approval: 1432.
- CAT II/III ILS Operations Phase IV Approval: 1433.
- CAT II/III ILS Operations Phase V Approval: 1434.

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4-303 REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions):

- Title 14 CFR parts 91, 97, 119, 121, 125, 129, and 135.
- Federal Aviation Administration (FAA) Order 6750.24, Instrument Landing System and Ancillary Electronic Component Configuration and Performance Requirements.
- FAA Order JO 7110.65, Air Traffic Control.
- FAA Order JO 7210.3Y, Facility Operation Administration.
- FAA Order 8260.49, Simultaneous Offset Instrument Approach (SOIA).
- FAA Order 8400.13, Procedures for the Evaluation and Approval of Facilities for Special Authorization Category I Operations and All Category II and III Operations.
- Advisory Circular (AC) 25-7, Flight Test Guide for Certification of Transport Category Airplanes.
- AC 97-1, Runway Visual Range (RVR).
- AC 120-28, Criteria for Approval of Category III Weather Minima for Takeoff, Landing, and Rollout.
- AC 120-29, Criteria for Approval of Category I and Category II Weather Minima for Approach.
- AC 120-57, Surface Movement Guidance and Control System.
- AC 120-71, Standard Operating Procedures for Flight Deck Crewmembers.
- Technical Standard Orders (TSO).
- U.S. Flight Information Publications (FLIP).

B. Forms. None.

C. Job Aids. None.

4-304 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 which meet all CAT II equipment, performance, and lighting requirements. The operator must use either autoland or HUD approved to touchdown.

B. Special Authorization (SA) Category (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 an approved CAT II or III HUD to DH.

C. SA CAT II. Order 8400.13 authorizes CAT II approaches with a DH as low as 100 feet and visibility minimums of RVR 1200 at runways which do not meet all of the lighting requirements (Approach Lighting System with Sequenced Flashing Lights (ALSF))-2, TDZ,

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RCL lights) for standard CAT II. The operator must use either autoland or HUD approved to touchdown.

D. 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 1,200 feet (350 meters).

4-305 APPROVAL METHOD.

A. Part 91. A part 91 (including part 91 subpart F (part 91F)) large aircraft operator is issued a letter of authorization (LOA) for SA CAT I.

B. Part 125 Letter of Deviation Authority (LODA) Holders (Part 125M in the Web-Based Operations Safety System (WebOPSS) Database). A part 125 LODA holder is issued an LOA for SA CAT I using C052 in WebOPSS, and issued CAT II (RVR 1200), CAT II (RVR 1000), and/or SA CAT II (RVR 1200) using C059 in WebOPSS.

C. Part 91 Subpart K (Part 91K). A part 91K operator is issued a management specification (MSpec) for SA CAT I using C052 and an MSpec for CAT II (RVR 1200), CAT II (RVR 1000), and/or SA CAT II (RVR 1200) using C059 in WebOPSS.

D. Part 121, 125, 129, and 135. Part 121, 125, 129, or 135 operators are issued operations specification (OpSpec) C052 for SA CAT I and OpSpec C059 for CAT II (RVR 1200), CAT II (RVR 1000), and SA CAT II (RVR 1200) in WebOPSS. Issue OpSpec H108 for CAT II helicopter operations.

4-306 GENERAL.

A. Objective. The essential difference between CAT I and II operations is that a CAT II operation places greater reliance on the guidance provided by the airborne and ground-based equipment. This equipment must be capable of delivering the aircraft to a position from which the flightcrew can accomplish a transition from instrument to visual flight at a height above touchdown (HAT) of 100 feet and complete the landing in the reduced (CAT II) seeing-conditions. The primary objective of CAT II operations is to provide a level of safety equivalent to CAT I precision instrument approach operations, even though the seeing-conditions in CAT II operations can be much worse than those encountered in CAT I operations. This objective (the equivalent level of safety) is achieved by the following:

- Enhanced reliability and precision in the airborne and ground-based equipment to increase the precision of flightpath control;
- Enhanced flightcrew training and qualifications to increase the precision of flightpath control;
- Additional airport visual aids to enhance seeing-conditions;
- Additional criteria to ensure obstacle and terrain clearance;
- Additional criteria to ensure ILS signal protection;
- Special operational procedures; and
- Special air traffic control (ATC) procedures, limitations, or both.

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B. Operational Approval Basis. CAT II operations are approved for an operator by the issuance of an OpSpec/MSpec/LOA that authorizes the conduct of CAT II instrument approach procedures (IAP) at specified airports. The basis for this approval depends on the operating rules applicable to the operation (part 91K, 121, 125, or 135), the complexity of aircraft (turbine-powered, reciprocating, or helicopter), the passenger capacity of the aircraft, and/or the size of the aircraft (large or small). The operator evaluation and approval process for reduced visibility flight operations, including CAT II/III operations, is covered in depth in Volume 4, Chapter 2, Section 2.

4-307 CAT II OPERATIONAL CONCEPTS. The weather conditions in a CAT II operation restrict seeing-conditions so that the external visual references necessary to manually control the aircraft are not acquired until the aircraft reaches a very low altitude (typically 100 to 200 feet above ground level (AGL)). Therefore, the flightcrew must operate and control the aircraft by referring to instruments throughout most of the approach and to a combination of instrument and external visual information during the final stages of the approach, flare (deceleration for helicopters), and landing. Because of the reduced maneuvering capability resulting from CAT II seeing-conditions, the precision of the flight guidance system and the overall precision of flightpath control must ensure that the aircraft can be flown to a position that is closely aligned with the RCL and the desired glidepath. The increased reliability and precision required of the airborne and ground-based equipment is necessary to ensure that when the aircraft arrives at DH it is on a flightpath that permits the pilot to complete the landing without any significant runway alignment maneuvers. All CAT II operations are conducted in accordance with the DH and RVR concepts used in CAT I operations. However, because of the limited seeing-conditions available in CAT II weather conditions, the additional requirements outlined under the objective of CAT II operations are necessary to ensure that an adequate level of safety is maintained when an aircraft is being operated in these conditions. Technologies such as HUD and automatic landing systems have resulted in additional operational capability of airborne avionics systems and the potential for additional landing minimums credit. These airborne systems, coupled with modern reliable ILS and more restrictive performance requirements associated with procedures developed for low visibility operations, CAT II or lower-than-standard CAT I operations can now be authorized to approved runways that were originally programmed to just support basic CAT I operations (Order 8400.13).

A. Function of Visual Reference. Because of the limitations in the airborne equipment used in CAT II operations and the available instrument guidance, the pilot must have sufficient visual references to manually control and maneuver the aircraft from the DH to a full stop on the runway. These external visual references are required below DH for the pilot to control and maneuver the aircraft, align the aircraft with the RCL, touch down within the TDZ, and then roll out on the runway.

B. Purpose of CAT II Operating Minimums. CAT II operating procedures and minimums have been established to ensure that the desired level of safety is achieved when CAT II seeing-conditions exist. These operating minimums are based on the DH and RVR concepts. The established operating minimums (DH and RVR) determine the minimum safe heights for instrument flight and the minimum RVR at which the landing can be safely completed by external visual reference in a particular aircraft. These operating minimums are based on established CAT II operational concepts and on the required CAT II airborne

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equipment, ground-based visual and electronic equipment, operating procedures, and pilot training and qualification. These operating minimums, when combined with other CAT II requirements, ensure that the combination of information available from external visual sources and the aircraft instruments and equipment are sufficient to enable properly qualified pilots to safely operate the aircraft along the desired flightpath.

C. Establishing Operating Minimums.

1) Several sets of operating minimums are established for CAT II operations. For standard CAT II operations, minimums are DH 150/RVR 1600, DH 100/RVR 1600, and DH 100/RVR 1200. For operations based on autoland or Head-Up-Guidance System (HGS), minimums can be as low as DH 100/RVR 1000 (at foreign airports and domestic ILS Type III facilities), and an SA for CAT II operations can be approved for RVR 1200 at specially approved ILS facilities that do not meet International Civil Aviation Organization (ICAO) standards for ALSF/TDZ/RCL lighting systems. Most runways that support CAT II operations permit the use of DH 100/RVR 1200 operating minimums. Operating minimums at some runways, however, are restricted to DH 150/RVR 1600 because of limitations in the ground equipment (such as a single RVR reporting system), localizer signal reliability, limitations imposed by the pre-threshold terrain (RA not authorized), and/or obstacle clearance limitations in the final approach surface, the approach light surface, the touchdown area, and the missed approach area.

2) Order 8400.13 sets forth standards for a specific facility to be modified and approved for the SA CAT II operations. For an approved facility, there will be a CAT II procedure developed to conform to the standard Terminal Instrument Procedures (TERPS) CAT II development criteria and published as a part 97 Standard Instrument Approach Procedures (SIAP). In addition to the standard note, “CAT II SPECIAL AIRCREW AND AIRCRAFT AUTHORIZATION REQUIRED,” that appears on the chart, an additional note will be included: “This CAT II does not meet ICAO standard for ALSF/TDZ/RCL light systems. Specific OpSpec/MSpec/LOA to conduct this approach using autoland or HGS to touchdown are required.” The CAT II operating minimums for individual operators and specific aircraft are established in accordance with the criteria in AC 120-29, this order, Order 8400.13, and U.S. TERPS.

D. CAT II Flight Guidance and Control Systems. Standard CAT II operations are based on the use of special airborne and ground-based equipment that have capability, reliability, and redundancy superior to the equipment required for CAT I operations (see AC 120-29). Although CAT II airborne equipment provides increased capability, reliability, and redundancy, the flight control guidance systems used in these operations are not necessarily capable of automatically detecting all potential failures that could significantly disturb the aircraft’s flightpath (e.g., single-channel flight control systems). If such failures occur, the flightcrew must be able to quickly detect the failure and to intervene manually to continue safely to the approach and landing or execute a missed approach. In other words, CAT II operations without autoland are based on the use of single-channel flight directors (FD), single-channel autopilots, or combinations of both. Even though some CAT II operations are based on dual independent FDs, each of these systems is usually a single-channel system that is not capable of detecting all potential failures. Therefore, even with dual independent FDs, the flightcrew must be able to detect failures and manually intervene in certain cases. CAT II operations are also based on the

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use of redundant ILS ground equipment; dual ILS airborne equipment; RAs (to identify DH); instrument failure detection and warning systems; special missed approach guidance equipment; and rain removal equipment. SA CAT II operations are based on procedures developed for use on specific approved facilities and that the aircraft are certified for CAT III operations; i.e., autoland or HUD to touchdown (Order 8400.13).

E. Autoland or HUD to Touchdown at CAT I Runways. Volume 4, Chapter 2, Section 5, contains guidance about the use of autoland or HUD to touchdown at CAT I runways.

F. Airworthiness of CAT II Airborne Equipment.

1) Throughout the history of CAT II operations, two processes have existed for showing that the airborne equipment of the aircraft is Airworthy for CAT II operations. One process is the type design approval process in which approval is obtained during aircraft certification testing. The other is the operational demonstration and approval process in which approval is obtained after the operator/program manager demonstrates satisfactory airworthiness of the equipment in actual flight operations. Currently, the most prevalent process is the type design approval process in which approval is contained in the FAA-approved Aircraft Flight Manual (AFM). Aircraft that have CAT II type design approval are not required to undergo an operational airworthiness demonstration. The operator/program manager is responsible for providing official written FAA documentation that the aircraft is CAT II certified.

2) For aircraft that do not have CAT II type design approval, an operational demonstration of CAT II airworthiness in accordance with AC 120-29 is required. Generally, this operational demonstration program includes a requirement that the operator conduct at least 300 approaches to 100 feet in CAT I or better weather conditions using the proposed CAT II system. RFSD NextGen Branch (AXX-220) concurrence is required before any operational demonstration and approval program may be initiated.

3) Special design requirements and special maintenance programs are necessary to achieve the airborne system reliability required for the conduct of CAT II operations. The special maintenance programs necessary for CAT II operations are extensive and expensive and are usually the largest factors affecting an operator's decision of whether to conduct these operations.

G. Airports and Runways. U.S. operators with the CAT II OpSpec/MSpec/LOA are approved to conduct CAT II operations for any U.S. airport/runway (excluding special terrain CAT II/III airports/runways) for which a CAT II IAP has been published.

H. Foreign CAT II IAP.

1) Operations. All CAT II operations by U.S. operators at foreign airports must be authorized in accordance with the guidance and direction in this order. All foreign runways approved for CAT II operations by U.S. operators must also meet the requirements of this order and the current edition of Order 8260.31, Foreign Terminal Instrument Procedures (FTIP).

2) Foreign Equivalence. Although it is recognized that the CAT II ground-based systems and procedures at foreign airports may not be in exact accordance with U.S. standards, it

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is critical for the foreign airports to provide the information and functions that are necessary for CAT II operations in a manner consistent with the intent of U.S. CAT II standards.

3) General. The FAA region that has surveillance responsibility for a particular foreign airport has the responsibility for evaluating any runway at that airport that supports CAT II operations. The controlling region is also responsible for evaluating these CAT II runways in accordance with Order 8260.31 and for recommending approval or disapproval of CAT II operations to those runways. The controlling region's recommendations must be forwarded to the Flight Technologies and Procedures Division (AFS-400) for further evaluation and final approval or disapproval.

NOTE: Foreign runways that have been determined to be equivalent to U.S. CAT II standards and approval for CAT II operators are identified in the list of runways maintained by AFS-400. Operators desiring CAT II approvals at foreign airports that are not on this approved list should submit a request for evaluation and approval through their principal operations inspector (POI) to the RFSD NextGen Branch. The controlling region's NextGen Branch will conduct an evaluation. Upon successful completion of the evaluation, the NextGen Branch will notify AFS-400 for final approval and addition to the approved list.

4) Determining Equivalence. The major factor that is considered by the controlling region in approving foreign runways in accordance with Order 8260.31 for CAT II operations by U.S. operators is the degree of equivalence with U.S. CAT II standards. This determination evaluates the equivalence of:

- High intensity approach lights;
- High intensity runway edge lights;
- TDZ and RCL lights;
- Taxiway edge lights;
- High-intensity taxiway centerline lights;
- Runway markings;
- The quality and integrity of the approach and landing ground-based guidance system;
- The RVR reporting capabilities and procedures;
- ILS-critical areas, including signs and markings;
- Obstacle clearance protection in the approach and missed approach, including the obstacle-free zone;
- Airport surface traffic control;
- Terminal area ATC; and
- Procedures for regulating the ground movement of aircraft and vehicles during CAT III operations.

5) Authorizing Foreign CAT II Runways. All CAT II operations conducted in foreign countries must be conducted in accordance with the operator's CAT II OpSpecs. The only means of approving these operations is through the issuance of OpSpecs, which specify the foreign runways and minimums authorized for each aircraft used by the operator. OpSpecs C059

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and H108 specify the CAT II IAPs, runways, operating minimums, limitations, and aircraft authorized for CAT II operations for a particular operator. These paragraphs also specify the CAT II airborne equipment, RVR equipment, pilot qualification, and missed approach requirements that apply to the operator's CAT II operation. If the flightcrew is properly qualified and the aircraft is properly equipped and maintained, an operator can, in general, be authorized to conduct CAT II All Weather Terminal Area Operations (AWTA) to any foreign runway approved for CAT II operations. The exception to this are those runways specified as restricted CAT II runways. The criteria in AC 120-29 and this order establish the lowest approach and landing minimums that can be authorized, under any circumstances, for CAT II operations. The lowest minimums for each kind of CAT II operation for a particular operator are specified in OpSpecs C059 and H108, as appropriate. FAA inspectors shall not authorize an operator to use minimums lower than these values. Additionally, inspectors shall not authorize the use of CAT II minimums for any foreign runway unless the provision of this order and Order 8260.31 are met.

I. CAT II Operations to Airports/Runways with Special (Irregular) Terrain.

1) Certain airports/runways with CAT II/III IAPs are built on irregular terrain (Spokane International Airport (KGEG)) or have irregular terrain prior to the threshold (Pittsburgh International Airport (KPIT), Seattle-Tacoma International Airport (KSEA), Denver International Airport (KDEN), Cincinnati/Northern Kentucky International Airport (KCVG)) that has potential impact on autoland/HUD to touchdown capabilities. Every new aircraft type/model must be evaluated by a lead operator on each of these runways in CAT I conditions or better before autoland/HUD to touchdown operations can be conducted in CAT II conditions. After review and approval by RFSD and AFS-400, that runway and aircraft type/model will be added to the approved list located on the AFS-400 Web site. The process for conducting special terrain evaluation is described in detail in AC 120-28 and summarized in Volume 4, Chapter 2, Section 2.

2) Every subsequent operator requesting CAT II autoland/HUD to touchdown at any of the special terrain airports/runways using an aircraft type/model listed on the AFS-400 Web site must conduct 15 landings in CAT I conditions or better to verify that their autoland procedures and maintenance will permit safe autoland operations at that runway. The process for subsequent operators conducting special terrain operations is described in detail in AC 120-28 and summarized in Volume 4, Chapter 2, Section 2.

J. Regional and Headquarters' (HQ) Review and Concurrence. All initial approvals for CAT II operations that are based on ILS facilities for each type of aircraft operated by an operator/program manager require review and concurrence by the RFSD NextGen Branch (AXX-220) before an OpSpec/MSpec/LOA may be issued for that operation. Unless specified otherwise in the RSFD review and concurrence, subsequent reductions in CAT II operating minimums for each aircraft type do not require further RFSD concurrence before the revised OpSpec/MSpec/LOA authorizing the lower minimums can be issued to the operator.

4-308 STANDARD CAT II OPERATIONS. Standard CAT II operating minimums (DH 100/RVR 1200) are based on the building block approach. The building-block approach is based on CAT I operations, including standard CAT I requirements, and includes the special aeronautical knowledge, experience, skill, training, and qualifications as well as the special

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airborne and ground-based equipment specified in AC 120-29. The assumptions and criteria used in aircraft certification and CAT II IAP design must be compatible with the operational concepts in this order. These assumptions and criteria ensure that flightcrews and aircraft that meet the requirements of this order and AC 120-29 can be used to safely conduct CAT II operations using standard CAT II minimums. Any special equipment or procedures necessary for the safe conduct of CAT II operations must be specified in the airworthiness certification basis of the aircraft (type certificate (TC) or Supplemental Type Certificate (STC)) or in the FAA-approved AFM. Any aircraft that cannot be safely operated to standard CAT II operating minimums using flightcrews that meet the minimum requirements of this order and AC 120-29 shall not be certificated or otherwise approved for CAT II operations. The OpSpec/MSpec/LOA establishes the lowest operating minimums that can be used in any CAT II operation, even if the established IAP specifies minimums lower than those values. Special airborne equipment, special ground-based equipment, and special flightcrew training required for CAT II operations are specified in this order, AC 120-29, and the FAA-approved AFM.

A. OpSpec/MSpec/LOA for Standard CAT II. OpSpec/MSpec/LOA C059 authorizes standard CAT II 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.

B. Standard CAT II Operating Minimums. The standard CAT II operating minimums for all aircraft are DH 100 and RVR 1200. The DH is typically based on the use of radio (radar) altimetry. Procedures that have “Radio Altitude minimums Not Authorized (RA NA)” (for example, due to irregular underlying terrain) typically use the first indication of arrival at the inner marker (IM) as a means to establish decision altitude (DA)/decision height (DH). However, an operator may elect to use first indication of arrival at either the IM or the barometric altitude DA, whichever comes first, as the means for minimums determination.

C. Higher-Than-Standard CAT II Operating Minimums. The higher-than-standard CAT II minimums for all aircraft are DH 100 and RVR 1600. These minimums are usually applied as interim minimums (restricted to higher-than-standard CAT II minimums) for a 6-month demonstration period for operators/program managers new to CAT II operations. The first 6 months are used to validate the effectiveness of the operator’s/program manager’s maintenance program and operational procedures in order to support issuance of the standard CAT II minimums. These minimums are also applied when there are RVR sensor limitations (only one installed), irregular underlying terrain, obstacle clearance requirements, or pre-threshold terrain limitations (RA not authorized—RA NA), which preclude the use of standard CAT II minimums.

4-309 SA CAT I OPERATIONS. SA CAT I operations are based on the use of a CAT II or III HUD to maintain a more precise lateral and vertical track, reduce Flight Technical Error (FTE), and avoid division of attention between flight instruments and visual identification of the landing area. SA CAT I procedures allow increased capacity in reduced visibility conditions using existing airport infrastructure. A runway may be eligible for SA CAT I if it meets the criteria in Order 8400.13 and is equipped with a suitable ILS that provides localizer and glideslope guidance to the runway threshold.

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A. Operator Requirements for 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 CAT III HUD to DH.

1) If the operator is not approved for CAT II or III operations using an approved HUD, then the operator must first complete the CAT II/III approval process in Volume 4, Chapter 2, Section 2.

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

B. OpSpec/MSpec/LOA for SA CAT I. 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 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.

C. SA CAT I Operating Minimums. SA CAT I approaches have an RA DH as low as 150 feet and a visibility minimum as low as RVR 1400 to runways that do not have TDZ or RCL lighting and require that the approach is flown using an aircraft with a HUD to DH.

4-310 CAT II RVR 1000 OPERATIONS. Order 8400.13 authorizes CAT II RVR 1000 operating minimums using autoland or HUD approved to touchdown at runways that meet all equipment, monitoring, and infrastructure requirements for standard CAT II. The runway must also have an approved Surface Movement Guidance and Control System (SMGCS) operation that provides a taxi routing from the landing runway to the parking area.

A. Operator Requirements for 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.

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 in Volume 4, Chapter 2, Section 2. 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 CAT 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.

B. OpSpec/MSpec/LOA for CAT II to RVR 1000. 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.

C. CAT II RVR 1000 Operating Minimums. The CAT II RVR 1000 operating minimums for all aircraft are DH 100 and RVR 1000. The RVR 1000 minimum is indicated in a chart note, referenced to the standard CAT II line of minimums, which states, “Requires specific

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OpSpec, MSpec, or LOA approval and use of autoland or HUD to touchdown." The use of autoland or HUD to touchdown is required. The DH is typically based on the use of radio (radar) altimetry. Another acceptable method at runways where an IM is available is to use both the IM and barometric altimeter. In these situations, the decision to continue for landing or execute a missed approach takes place at the first indication of the IM or at the published barometric DA, whichever occurs first.

4-311 SA CAT II OPERATIONS. SA CAT II operating minimums for all aircraft are not less than DH 100 and visibility of not less than RVR 1200 using autoland or HUD approved to touchdown. The intent of SA CAT I is to achieve lower landing minimums on runways that have the ILS facilities capable of supporting CAT II or CAT III approaches, but lack the instrument approach and/or runway lighting for CAT II or CAT III. Autoland or HUD approved to touchdown provides the equivalent level of safety as a standard CAT II approach. Specific details on SA CAT II can be found in FAA Order 8400.13.

A. Operator Requirements for 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.

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 in Volume 4, Chapter 2, Section 2. The operator is eligible for SA CAT II when RVR 1200 minimums 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.

B. OpSpec/MSpec/LOA for SA CAT II. SA CAT II authorization is contained in selectable text in OpSpec/MSpec/LOA C059 for parts 91, 91K, 121, 125, 129, 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.

C. SA CAT II Operating Minimums. The SA CAT II operating minimums for all aircraft are DH 100 and RVR 1200. The DH is based on the use of radio (radar) altimetry. Barometric altimetry is not an acceptable means of establishing the DH for SA CAT II operations.

4-312 OPERATIONAL CREDIT FOR CAT III EQUIPMENT.

A. Purpose of Program Validation. 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

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under a restriction that requires the airborne equipment to operate to CAT III standards (e.g., fail passive (FP) or fail operational (FO) automatic landing).

B. Opting Out of Program Validation. 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 OpSpec/MSpec/LOA must include a limitation that specifies 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 OpSpecs/MSpecs/LOA until the CAT II maintenance program for that aircraft is successfully validated.

RESERVED. Paragraphs 4-313 through 4-330.

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VOLUME 4 AIRCRAFT EQUIPMENT AND OPERATIONAL AUTHORIZATION

CHAPTER 2 ALL WEATHER TERMINAL AREA OPERATIONS

Section 7 Safety Assurance System: Category III Operations

4-331 OVERVIEW. This section contains concepts, direction, and guidance to be used by principal inspectors (PI) for evaluating and approving or denying requests for authorization to conduct all Category (CAT) III operations. This includes all CAT III operations at airports and runways new to an operator/program manager, even though previously approved aircraft, airborne equipment, ground-based equipment, concepts, and procedures are being used in these operations. Additional information may be found in Volume 4, Chapter 2, Section 1.

4-332 APPLICABILITY. The intent is that the PI will use the general information provided in this section, along with the specific information provided in Volume 4, Chapter 2, Section 2 for domestic operators and Volume 4, Chapter 2, Section 8 for Title 14 of the Code of Federal Regulations (14 CFR) part 129 foreign air carriers when evaluating requests for CAT III operations. This process is only applicable for operator requests for instrument landing system (ILS)-based CAT III operations. Requests for other than ILS-based CAT III should be forwarded to the regional Flight Standards division (RFSD) Next Generation (NextGen) Branch (AXX-220).

4-333 REPORTING SYSTEMS.

A. Safety Assurance System (SAS). The PI will utilize SAS Data Collection Tools (DCT) 2.2.2, Category II & III Ops, and 2.3.1, Appropriate Operational Equipment.

B. Program Tracking and Reporting Subsystem (PTRS). The PI will utilize PTRS activity codes.

- CAT II/III ILS Operations Phase I Approval: 1430.
- CAT II/III ILS Operations Phase II Approval: 1431.
- CAT II/III ILS Operations Phase III Approval: 1432.
- CAT II/III ILS Operations Phase IV Approval: 1433.
- CAT II/III ILS Operations Phase V Approval: 1434.

4-334 REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions):

- Title 14 CFR Parts 91, 97, 119, 121, 125, 129, and 135.
- FAA Order 6750.24, Instrument Landing System and Ancillary Electronic Component Configuration and Performance Requirements.
- FAA Order JO 7110.65, Air Traffic Control.
- FAA Order JO 7210.3Y, Facility Operation Administration.
- FAA Order 8260.49, Simultaneous Offset Instrument Approach (SOIA).

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- FAA Order 8400.13, Procedures for the Evaluation and Approval of Facilities for Special Authorization Category I Operations and All Category II and III Operations.
- Advisory Circular (AC) 25-7, Flight Test Guide for Certification of Transport Category Airplanes.
- AC 97-1, Runway Visual Range (RVR).
- AC 120-28, Criteria for Approval of CAT III Weather Minima for Takeoff, Landing and Rollout.
- AC 120-29, Criteria for Approval of Category I and Category II Weather Minima for Approach.
- AC 120-57, Surface Movement Guidance and Control System.
- AC 120-71, Standard Operating Procedures for Flight Deck Crewmembers.
- Technical Standard Orders (TSO).
- U.S. Flight Information Publications (FLIP).

B. Forms. None.

C. Job Aids. PIs of parts 121 and 135 Operators will utilize DCTs 2.2.2, Category II & III Ops, and 2.3.1, Appropriate Operational Equipment.

4-335 DEFINITIONS.

A. Category (CAT) III Operations. CAT III operations are separated into three subcategories: CAT IIIa, CAT IIIb, and CAT IIIc.

B. CAT IIIa Operations. CAT IIIa is an approach and landing operation with a Runway Visual Range (RVR) of not less than 700 feet (200 meters) without a decision height (DH), or with a DH of less than 100 feet (30 meters), or an alert height (AH), which 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.

C. CAT 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, which 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. Presently, the lowest FAA-approved minimum for any CAT III operations is RVR 300 (75 meters) due to difficulties in accomplishing safe ground movement for both aircraft and ground safety services, such as Aircraft Rescue and Fire Fighting (ARFF).

D. CAT 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.

4-336 APPROVAL METHOD.

A. Part 91 and Part 125 Letter of Deviation Authority (LODA) Holder. A part 91 (including part 91 subpart F) or 125 LODA holder operator is issued a letter of authorization

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(LOA) for all CAT III operations using the C060 in Web-based Operations Safety System (WebOPSS).

B. Part 91 Subpart K (Part 91K). A part 91K operator is issued a management specification (MSpec) for all CAT III operations using C060 in WebOPSS.

C. Parts 121, 125, 129, and 135. Part 121, 125, 129, or 135 operators are issued operations specification (OpSpec) C060 for all CAT III operations (or H109 for helicopter operations) in WebOPSS.

4-337 GENERAL.

A. Concepts, Direction, and Guidance. This section contains concepts, direction, and guidance to be used by inspectors for evaluating and approving or denying requests for authorization to conduct CAT III All Weather Terminal Area Operations (AWTA). All CAT III operations using aircraft, airborne equipment, ground-based equipment, or concepts/procedures, which are new to a particular operator, require approval. In addition, all CAT III operations at airports and runways new to a particular operator require approval even though previously approved aircraft, airborne equipment, ground-based equipment, concepts, and procedures are used in those operations. This section contains an amplification of the general concepts, policies, direction, and guidance covered in previous sections of this chapter. Specific standards are provided for inspectors evaluating CAT III AWTAs with airborne and ground-based equipment, which have well understood operational characteristics and limitations. In cases where an operator requests approval to conduct CAT III AWTAs using equipment, concepts, and/or procedures not addressed in these standards, a request for policy and guidance must be forwarded through the appropriate RFSD NextGen Branch (AXX-220) to the Flight Technologies and Procedures Division (AFS-400).

B. Types of CAT III Operations. The only types of CAT III operations that can be currently authorized (as of 2010) for use by U.S. operators are ILS based. CAT III operations using Global Positioning System (GPS) Landing Systems (GLS), which requires the use of a Ground Based Augmentation System (GBAS) or Local Area Augmentation System (LAAS), may also be approved in the near future.

C. Objective of CAT III Operations. The essential difference between CAT III AWTAs and CAT I and II operations is that a CAT III operation places a greater reliance on the guidance provided by the airborne and ground-based guidance equipment. The guidance provided by the equipment must continue through touchdown in CAT IIIa operations and through touchdown and rollout to a safe taxi speed in CAT IIIb operations. In contrast to other types of operations, CAT III operations do not ensure sufficient external visual cues for the pilot to manually control the aircraft during flare and landing. The primary objective of CAT III operations is to provide a level of safety equivalent to CAT I and CAT II operations without the use of these visual cues. The desired level of safety for CAT III operations is achieved by the following enhancements:

1) The airborne equipment and ground-based equipment must ensure increased precision in flightpath control. The increased reliability and precision of flightpath control

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(as compared to CAT I systems) is achieved through highly reliable and precise ground-based equipment and airborne systems. These systems are capable of guiding the aircraft with significantly increased precision to touchdown or through rollout, as appropriate.

2) The aircraft performance and equipment requirements associated with a missed approach from very low altitudes are enhanced to ensure that these operations can be safely conducted even if a momentary touchdown occurs on the runway after the go-around is initiated. Special criteria assures obstacle and terrain clearance to accommodate missed approaches from very low altitudes.

3) More stringent criteria are specified for the profile of the pre-threshold terrain to ensure that the flight guidance and control systems function properly during the final stages of approach, flare, and landing.

4) Surface Movement Guidance and Control Systems (SMGCS) are established to ensure the landing runway is protected from potential incursions and ensure the overall safety of the operation.

4-338 CAT III OPERATIONAL CONCEPTS. The weather and environmental conditions encountered in CAT III AWTAs severely restrict seeing-conditions. External visual reference is not acquired until the aircraft reaches a very low altitude. Typically, external visual references begin to become available below 100 feet. Even though external visual references are usually available before touchdown, the seeing-conditions are not sufficient for the pilot to consistently perform a safe, manual landing. Therefore, the aircraft must be controlled by instruments and special equipment throughout the approach, flare, and touchdown (deceleration for rotorcraft) in weather conditions as low as RVR 700 and through rollout to a safe taxi speed (air taxi or hover for rotorcraft) in weather conditions below RVR 700. Due to the reduced seeing-conditions and the hazards associated with a pilot's attempts to manually maneuver the aircraft to landing in those seeing-conditions, the precision of the flight guidance and control system and the overall precision of flightpath control must provide these capabilities.

A. DH and AH. There are substantial differences between the DH and AH concepts. All FP operations are conducted in accordance with the DH and RVR concepts. All FO operations are normally conducted in accordance with the AH and RVR concepts. DHs are only used with FO systems in very unique situations (refer to AC 120-28). DH and AH are never used together in any operation since the DH requires that external visual reference be established before passing a specified point and AH does not. The very limited seeing-conditions available in CAT III operations require additional criteria to ensure that an adequate level of safety is achieved and maintained when operating in this environment.

1) DH Operations. For FP operations using a DH, the pilot must arrive at a decision before passing the DH to either permit the flight guidance and control system to be used to touchdown or to execute a missed approach. For a DH operation, the external visual information, the instrument information, and the airborne system information must be integrated so the flightcrew can make a definitive decision no later than arrival at the DH. The decision to permit the flight guidance and control system to continue to direct the aircraft to touchdown must be based on an assessment that the airborne systems have not degraded in a way that affects FP

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capabilities, and the external visual cues (touchdown zone (TDZ) lighting) confirm that the aircraft will touchdown within the TDZ. Since all DHs used in CAT III operations must be 50 feet or less, the inner marker (IM) cannot be used to define the CAT III DH. Since DH 50 is located very near the runway threshold, the terrain profile within these areas is adequate for CAT III radio altimeter (RA)-based DHs. CAT III operations are normally conducted using a DH of 50 feet; however, a different DH may be operationally approved in special circumstances, such as the use of a hybrid CAT III landing system.

2) AH Operations. For operations with an AH, the pilot must also arrive at a decision, before passing the AH, to either permit the flight guidance and control system to be used to touchdown or to execute a missed approach. In direct contrast to operations with a DH, however, this decision must be based on an assessment that the airborne systems have not degraded in a way that affects FO capabilities. FO systems permit certain system failures below AH without requiring a missed approach, because the aircraft is still capable of continuing to a safe landing and rollout. External visual references are not required before touchdown in operations based on the AH concept.

B. Kinds of CAT III Operations. There are two different and distinct kinds of CAT III operations: FP operations and FO operations.

1) FP operations use a DH of 50 feet (15 meters) and a TDZ RVR no lower than RVR 600 (175 meters). In the event of a failure when using a FP CAT III system, the flight guidance and control system will not disturb the aircraft's flightpath when it fails, and the flightcrew immediately receives an aural and visual warning of system failure. Therefore, a DH must be used to ensure that, before passing 50 feet above ground level (AGL), the flightcrew establishes external visual reference with the TDZ to determine that the flight guidance and control system is functioning properly and to ensure that the aircraft will land within the TDZ. A go-around is mandatory if the flight guidance and control system fails before touchdown during FP operations in CAT III weather conditions.

2) FO operations usually use an AH instead of a DH (refer to AC 120-28). As the name implies, critical CAT III systems remain operational even if some failures occur. FO systems are designed so that the system remains fully operational following any failure or combination of failures that are likely to occur after the aircraft passes AH. Therefore, there is no requirement to establish external visual reference before touchdown to confirm that the aircraft will land safely. The lowest minimum that may currently be approved for any AWTA by a U.S. operator is RVR 300 (90 meters). This restriction is based on the difficulties associated with aircraft movement on the taxiways, ramps, and other maneuvering areas on the airport and the difficulties related to providing timely safety facilities and services (such as ARFF).

C. CAT III Operating Minimums. CAT III operating minimums are based on two criteria and are always the higher of the following minimums:

1) Published ILS Minimums. The part 97 Standard Instrument Approach Procedure (SIAP) criteria is based on the integrity and reliability of the ILS ground system. When the ILS supports operation to touchdown but not rollout, RVR 700 is the lowest authorized minimum. When the ILS supports both touchdown and rollout operations, RVR 600 minimums are

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typically published. If the ILS supports both touchdown and rollout operations and the Localizer (LOC) is monitored to an even higher standard of reliability, RVR 300 minimums may also be published.

2) CAT III OpSpec/MSpec/LOA C060 Minimums. CAT III minimums in C060 are based on the certification statement in the Aircraft Flight Manual (AFM), and based on the airworthiness requirements contained in the appropriate revision of AC 120-28.

3) 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 are currently limited to RVR 700 for TDZ and RVR 700 for Mid Runway Rollout (MID) by regulation, unless the AFM also contain statements authorizing FP landing systems. The aircraft may then be authorized RVR 600 for TDZ, RVR 600 for MID, and RVR 300 for rollout.

b) Aircraft authorized for CAT IIIb with a rollout control system that meets the criteria in AC 120-28, Appendix 2 (FP rollout system) may be authorized minimums as low as RVR 400 for TDZ, RVR 400 for MID, and RVR 300 for rollout.

c) Aircraft authorized for CAT IIIb with a rollout control system that meets the criteria in AC 120-28, Appendix 3 (FO rollout system) may be authorized minimums as low as RVR 300 for TDZ, RVR 300 for MID, and RVR 300 for rollout.

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

e) 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.

f) FP Landing System with Any Rollout System. Aircraft with a FP landing and rollout system may be authorized minimums as low as RVR 600 for TDZ, RVR 400 for MID, and RVR 300 for rollout.

g) FO Landing System with a FP Rollout System. Aircraft with an FO landing system and FP rollout systems may be authorized minimums as low as RVR 400 for TDZ, RVR 400 for MID, and RVR 300 for rollout RVR.

h) FO Landing System with a FO Rollout System. Aircraft with FO landing and rollout systems may be authorized minimums as low as RVR 300 for TDZ, RVR 300 for MID, and RVR 300 for rollout RVR.

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4-339 RA AND PRE-THRESHOLD TERRAIN.

A. Operation. The operation of almost all CAT III landing systems is dependent on RA information during the latter stages of the landing. The flare profile, the rate of descent at touchdown, and the distance of the touchdown point from the threshold can be adversely affected by the profile of the terrain immediately before the landing threshold. The terrain, which is most critical, lies in an area approximately 200 feet on either side of the runway centerline (RCL) extended from the threshold into the approach area to a distance of approximately 1,000 feet before the landing threshold.

B. Pre-threshold Terrain. At runways where the terrain beneath the approach flightpath is not approximately level, abnormal autopilot (AP) and/or flight director (FD) behavior may result from erroneous RA signals. Irregularities in the pre-threshold terrain can have a major effect on the performance of the landing systems required for CAT III operations (autoland or Head-Up Display (HUD) to touchdown). A special operational test and evaluation program is required before approving any CAT III operations for any aircraft on these runways. This test program is essential to ensure that CAT III operations can be safely conducted on these runways with a particular CAT III aircraft type (aircraft with similar flight characteristics and similar flight guidance and control systems). This special test and evaluation must be accomplished in nonrevenue service.

C. Requests for Evaluation. All requests to conduct this evaluation must be sent to the RFSD NextGen Branch (AXX-220) for approval. Inspectors shall not, under any circumstances, authorize any CAT III operations with any aircraft to these runways unless that particular CAT III type aircraft has been specifically evaluated in accordance with AC 120-28 and specifically approved for that operation by the RFSD. The Flight Operations Branch (AFS-410) maintains a list of these special terrain runways which 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 document lists all CAT II/III special terrain runways in the United States, as well as all approved aircraft make, model, and series (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 Volume 4, Chapter 2, Section 2 and AC 120-28 for more information about authorizing CAT II/III operations at special terrain runways.

D. Runways. A few CAT II runways currently have restrictions (i.e., Radio Altitude minimums Not Authorized (RA NA)) due to the pre-threshold terrain profile, which prohibits the use of RA information to determine the CAT II DH. Standard CAT II operations (DH 100 and RVR 1200) can still be conducted by using the IM to determine arrival at the DH. Although the RA cannot be used to accurately and reliably determine arrival at the CAT II DH (height above touchdown (HAT) 100), it may still be possible to safely conduct CAT III operations to these runways if the pre-threshold terrain does not adversely affect the performance of the CAT III landing system. For example, Pittsburgh International Airport (KPIT) runway 10L has a CAT II approach with “RA NA” minimums (RA DH not authorized), but certain aircraft have been approved for CAT III autoland operations.

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4-340 FUTURE REDUCTIONS TO LANDING MINIMUMS. The lowest landing minimum currently authorized for CAT III operations by U.S. operators at any airport and by foreign air carriers in the United States is RVR 300. This restriction is related primarily to problems associated with aircraft taxi operations and the difficulty of providing adequate safety services (such as crash, fire, rescue, and collision prevention) when operating in seeing-conditions less than RVR 300. The lowest minimum currently authorized for foreign air carriers outside the United States is 75 meters (RVR 300) and is based on an operational determination similar to the U.S. RVR 300 decision. Future reductions in landing minimums are unlikely until technology permits the development of economically viable capabilities to adequately resolve these limitations. Presently potential solutions appear to be enhancements in airborne equipment such as forward-looking infrared or millimeter wave radar technologies.

4-341 FOREIGN CAT III INSTRUMENT APPROACH PROCEDURES (IAP).

A. Operations. All CAT III operations by U.S. operators at foreign airports must be authorized in accordance with the guidance and direction in this order. All foreign runways approved for CAT III operations by U.S. operators must also meet the requirements of this order and the current edition of FAA Order 8260.31, Foreign Terminal Instrument Procedures.

B. Foreign Equivalence. Although it is recognized that the CAT III ground-based systems and procedures at foreign airports may not be in exact accordance with U.S. standards, it is critical for the foreign airports to provide the information and functions that are necessary for CAT III operations in a manner consistent with the intent of U.S. CAT III standards.

C. General. The FAA region, which has surveillance responsibility for a particular foreign airport, has the responsibility for evaluating any runway at that airport which supports CAT III operations. The controlling region is also responsible for evaluating these CAT III runways in accordance with Order 8260.31 and for recommending approval or disapproval of CAT III operations to those runways. The controlling region's recommendations must be forwarded to AFS-400 for further evaluation and final approval or disapproval.

NOTE: Foreign runways that have been determined to be equivalent to U.S. CAT III standards and approval for CAT III operators are identified in the list of runways maintained by AFS-400. Operators desiring CAT III approvals at foreign airports that are not on this approved list should submit a request for evaluation and approval through their principal operations inspector (POI) to the RFSD NextGen Branch. The controlling region's NextGen Branch will conduct an evaluation. Upon successful completion of the evaluation, the NextGen Branch will notify AFS-400 for final approval and addition to the approved list.

D. Determining Equivalence. The major factor that is considered by the controlling region in approving foreign runways in accordance with Order 8260.31 for CAT III operations by U.S. operators is the degree of equivalence with U.S. CAT III standards. This determination evaluates the equivalence of:

- High-intensity approach lights;
- High-intensity runway edge lights;

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- TDZ and RCL lights;
- Taxiway edge lights;
- High-intensity taxiway centerline lights;
- Runway markings;
- The quality and integrity of the approach and landing ground-based guidance system;
- The RVR reporting capabilities and procedures;
- ILS critical areas, including signs and markings;
- Obstacle clearance protection in the approach and missed approach, including the obstacle-free zone;
- Airport surface traffic control;
- Terminal area air traffic control (ATC); and
- Procedures for regulating the ground movement of aircraft and vehicles during CAT III operations.

E. Authorizing Foreign CAT III Runways. All CAT III operations conducted in foreign countries must be conducted in accordance with the operator's CAT III OpSpecs. The only means of approving these operations is through the issuance of OpSpecs, which specify the foreign runways and minimums authorized for each aircraft used by the operator. OpSpecs C060 and H109 specify the CAT III IAPs, runways, operating minimums, limitations, and aircraft authorized for CAT III operations for a particular operator. These paragraphs also specify the CAT III airborne equipment, RVR equipment, pilot qualification, and missed approach requirements that apply to the operator's CAT III operation. If the flightcrew is properly qualified and the aircraft is properly equipped and maintained, an operator can, in general, be authorized to conduct CAT III AWTAs to any foreign runway approved for CAT III operations. The exception to this are those runways specified as restricted CAT III runways. The criteria in AC 120-28 and this order establish the lowest approach and landing minimums that can be authorized, under any circumstances, for CAT III operations. The lowest minimums for each kind of CAT III operation for a particular operator are specified in OpSpecs C060 and H109, as appropriate. FAA inspectors shall not authorize an operator to use minimums lower than these values. Additionally, inspectors shall not authorize the use of CAT III minimums for any foreign runway unless the provision of this order and Order 8260.31 are met.

4-342 CAT I AUTOLAND OR HUD TO TOUCHDOWN OPERATIONS. Autoland or HUD to touchdown operations are required for all CAT III operations, and many operators use autoland or HUD for CAT II, CAT I, and visual flight rules (VFR) operations as well. Part 121, § 121.579(c); part 125, § 125.329(d); and part 135, § 135.93(d) prohibit the use of autoland or HUD to touchdown in any operation unless the operator is specifically authorized via OpSpecs. OpSpec C059 and C060 authorize autoland or HUD to touchdown in CAT II and CAT III operations, respectively. OpSpec C061 or H110 authorizes autoland operations in other than CAT II/III operations and OpSpec C062 or H111 authorizes HUD to touchdown in other than CAT II/III operations.

A. ILS Category Classification. The ILS category classification system provides a more comprehensive method of describing ILS performance than the simple CAT I/II/III

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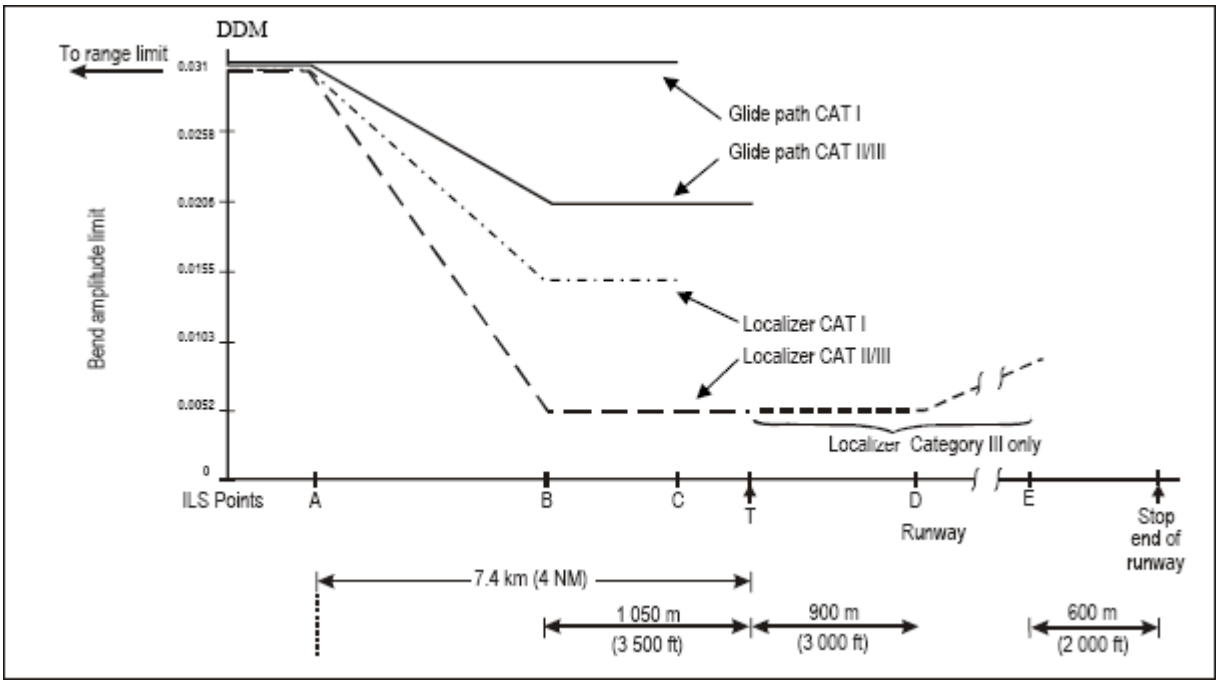
classification. ILS facility classification is described in Order 6750.24. A facility's classification is defined by using two characters (I/C, II/D, III/E, etc.).

1) The first character indicates conformance to the facility performance category standards. This character indicates if the ground equipment is classified as a CAT I, CAT II, or CAT III ILS.

2) The second character defines the ILS point (Figure 4-21A, Localizer Course and Glidepath Bend Amplitude Limits) to which the LOC conforms to the Facility Performance CAT III course structure tolerances. These classifications indicate ILS conformance to a physical location on the approach or runway as follows:

- A: 4 NM before the threshold.
- B: 3,500 feet before the threshold (CAT I decision point).
- C: Glidepath altitude of 100 feet height above threshold (HATh) (CAT II decision point).
- T: Threshold.
- D: 3,000 feet beyond the threshold (CAT III requirement only).
- E: 2,000 feet before the runway end (CAT III requirement only).

Figure 4-21A. Localizer Course and Glidepath Bend Amplitude Limits



B. Use of Autoland at U.S. CAT I Facilities or Equivalent. For CAT I, autoland may typically be used at runways with facilities other than those with published CAT II or III IAPs. This is to aid pilots in achieving stabilized approaches and reliable touchdown performance to improve landing safety in adverse weather; for CAT II or III training; to exercise the airborne system to ensure suitable performance; for maintenance checks; or for other such reasons. Use of

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this capability may be particularly important for pilot workload relief in stressful conditions of fatigue after long international flights; night approaches; crosswinds or turbulence; when there may be other aircraft non-normal conditions being addressed; or to aid safe landing performance in otherwise adverse weather, in restricted visibility, or with cluttered runways. This is true even though reported visibility may be well above minimums (e.g., heavy rain distorting view out the windshield, snow covered runways where markings are not easily visible, etc.).

C. ILS Classification and CAT I Autoland Operations. ILS classification is being added to the Airport/Facility Directory (A/FD), but not all ILS runways are included as of August 2010. To support autoland or HUD to touchdown operations, CAT III course structure tolerances to at least point D are preferred (e.g., I/D, II/D, III/D). In 2010, all published CAT II and III approaches in the United States meet this standard. CAT II approaches that do not support autoland operations will note this limitation via a chart note or Notice to Airmen (NOTAM). When conducting autoland operations on a CAT I runway/ILS, runways with an I/D or I/E classification are the most suitable and are preferred. Practice autoland or HUD to touchdown operations may be conducted at CAT I runways in CAT I or better weather conditions where the facility classification is unknown, because the flightcrew is monitoring system performance, visually verifying the position of the aircraft, and can determine whether to continue to a landing or execute a missed approach in CAT I or better weather conditions. Though it is not recommended, flightcrew monitoring and increased visibility also permits practice autoland or HUD to touchdown operations using an ILS classified as I/A, I/B, I/C, or I/T, provided the operation is performed in VFR conditions. The FAA maintains an information-only list of ILS classification status at http://avnwww.jccbi.gov/pls/datasheet_prd/PRO_ilsperform_rpt.

D. Pre-Threshold Terrain.

1) AFS-410 maintains a list of CAT II/III runways with special terrain which may affect autoland or HUD to touchdown operations, such as irregular pre-threshold terrain or TDZ slope. This list is available at http://www.faa.gov/about/office_org/headquarters_offices/avs/offices/afs/afs400/afs410/status_lists/. Each operator and aircraft must be approved for each special terrain runway to conduct any CAT II or III operations using autoland or HUD to touchdown. Volume 4, Chapter 2, Section 2 contains more information about how to authorize CAT II/III operations at special terrain runways.

2) The FAA does not analyze CAT I runways to determine if any irregular pre-threshold terrain will impact autoland or HUD to touchdown operations. Practice autoland or HUD to touchdown operations may be conducted at CAT I runways where the pre-threshold terrain has not been analyzed because the flightcrew is monitoring system performance, visually verifying the position of the aircraft, and can determine whether to continue to a landing or execute a missed approach in VFR conditions. All operators approved to use autoland- or HUD-equipped aircraft should be encouraged to routinely use these systems at suitably equipped runways during operations in VFR and in CAT I instrument flight rules (IFR) conditions. Flightcrew training should emphasize the importance of monitoring equipment performance on all practice autolands.

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E. Maintenance Return to Service and Required Practice Autolands. An aircraft manufacturer and certification requirements may require that a practice autoland or HUD to touchdown be performed on a published CAT II or III approach. If so, the operator should adhere to these requirements. If autoland is not required to be performed on a CAT II ILS, it is important to note that an unsatisfactory approach is extremely difficult to attribute to small errors in ILS ground equipment. Even CAT I ILS facilities that meet CAT III signal standards are not monitored to the same tolerances as CAT II/III facilities. An unsatisfactory approach due to a critical error incursion is something that may be identified, but an unsatisfactory approach due to a signal or monitor error cannot be detected by the flightcrew or maintenance.

F. Flightcrew Training. In addition to other training requirements, flightcrew training should emphasize the importance of:

1) Monitoring equipment performance and visual verification of aircraft position on all practice autolands.

2) Verifying that the CAT I approach does not have any charted restrictions, which would prohibit autoland or HUD to touchdown operations ("ILS unusable within 0.5 DME," "autopilot coupled approach not authorized below XXX feet").

3) Requesting that ATC protect the critical area for all practice autolands. ATC will protect the ILS critical areas if the ceiling is less than 800 feet and/or the visibility is less than 2 miles.

4) Performing maintenance return to service as required by either the manufacturer, certification, or the operator, as described in subparagraph 4-342E.

4-343 CAT II/III ILS OUTAGES AND CONTINUITY OF SERVICE (CoS) REQUIREMENTS.

A. Purpose. CAT II/III operations rely on high-integrity LOC and glideslope (GS) signals with a low probability radiated signal interruption (CoS). ILS design and approval criteria address required system integrity. The current edition of FAA Order JO 6750.57, Instrument Landing System Continuity of Service Requirements and Procedures, contains the policy and requirements for Technical Operations (Tech Ops) to meet CoS requirements for CAT II/III ILS facilities, including CAT II/III ILS downgrade and reinstatement criteria. The RFSD NextGen Branch (AXX-220) is the Flight Standards Service (AFS) point of contact (POC) for ILS CoS issues. AFS-400 is responsible for ILS CoS policy, guidance, and support. This section summarizes ILS CoS requirements relevant to inspectors and summarizes some of the relevant Tech Ops requirements. Refer to Order JO 6750.57 for current ILS CoS criteria, Order 6750.24, and Order 8400.13 for current AFS ILS facility requirements.

B. Definitions.

1) Continuity of Service (CoS). The quality that relates to the rarity of radiated signal interruptions. The level of CoS of the LOC or the glidepath is expressed in terms of the probability of not losing the radiated guidance signals.

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2) CoS Outage. Any reportable LOC or GS unscheduled interruption for which there was an unexpected cessation of the radiated signal, regardless of cause, or any failure of a LOC or GS to properly initiate radiation, such as when an ILS fails to radiate upon a runway interlock selection.

3) CoS Mean Time Between Outages (MTBO). Average number of hours between countable CoS outages, considering only the last five in-service periods. This MTBO calculation does not include consideration of all interruptions as is typical in National Airspace Performance Reporting System (NAPRS) reporting. Rather, it represents the MTBO outlined in International Civil Aviation Organization (ICAO) Annex 10.

4) Instrument Landing System (ILS) CoS Office of Primary Responsibility (OPR). A single, functional entity within the technical services organization of each service area, consisting of one or more designated ILS experts. The ILS CoS OPR is responsible for analyzing and monitoring ILS CoS throughout the entire service area and recommending actions to best ensure that MTBO requirements are met.

5) Predicted MTBO. The CoS MTBO if an outage occurred at the time of the calculation.

6) Projected MTBO. The CoS MTBO projected out 3 months from the predicted MTBO.

C. ILS Outage and Downgrade Requirements. Tech Ops maintains a comprehensive database, which contains the outage history and up-to-date MTBO for all ILS facilities in the United States. Order JO 6750.57 requires an ILS facility to be downgraded based on the number of outages in the preceding 6 months. As a result, Tech Ops and Navigation Services escalate their priorities and involvement in repairs at facilities that accrue multiple outages over a short period of time.

1) When Tech Ops downgrades a facility, the corresponding ILS landing minimum is also taken out of service via NOTAM:

a) Fourth outage in the preceding 6 months: CAT III RVR 300 minimum not authorized.

b) Fifth outage in the preceding 6 months: All CAT III minimums not authorized.

c) Sixth outage in the preceding 6 months: All CAT II and CAT III minimums not authorized.

2) This outage count applies to the separate LOC and GS systems, not the sum of the outages for each system. For example, a LOC which has its fifth outage in the preceding 6 months will lose all CAT III minimums. An ILS with three LOC outages and three GS outages is not downgraded, because neither the LOC nor the GS individually have four or more outages in the preceding 6 months. (See Table 4-8, Outage Consequences.)

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3) Order JO 6750.57 is clear that downgrades are required as a result of excessive outages in the preceding 6 months. Tech Ops will notify the appropriate NextGen Branch (AXX-220) of a downgrade due to outages, and will not waive any ILS downgrade requirements except as allowed in Order JO 6750.57. Due to the strong emphasis on system reliability to support CAT II/III landing operations, the RFSD NextGen Branch should not consider waivers to ILS downgrades as a result of excessive outages.

D. ILS Reinstatement After a Downgrade. To reinstate an ILS landing minimum, Tech Ops repairs the ILS facility, verifies CAT II or III capability (as applicable), and first restores CAT I landing minimums. After the system demonstrates sufficient reliability by operating outage free for a fixed period of time, lower landing minimums are then reinstated as authorized in Order JO 6750.57. After any downgrade, the ILS must operate without an outage for 4 weeks to restore the next lower landing minimum. To restore each additional lower landing minimum, the system must operate outage free for an additional 2 weeks for each minimum to reinstate. See Table 4-8A, Instrument Landing System Reinstatement Periods, for examples of ILS reinstatement after a downgrade.

E. MTBO Requirements. Unlike downgrades as a result of excessive outages in the preceding 6 months, Order JO 6750.57 does not require a downgrade if a LOC or GS MTBO falls below the hours required in Order 6750.24 and Order 8400.13. Instead, a downgrade is at the discretion of AFS, in coordination with Tech Ops. This is because MTBO is very useful as a trend analysis number, but averaging the time periods between outages can be misleading in specific circumstances.

1) The calculation of MTBO is the average number of hours between countable CoS outages, considering only the last five in-service periods, as shown in Figure 4-22, Active Periods Between Outages.

2) While MTBO provides a very useful tool for trend analysis, very large or very small numbers can skew the entire MTBO up or down respectively. Table 4-8B, Mean Time Between Outages—False Positive, and Table 4-8C, Mean Time Between Outages—False Negative, show an example of MTBO depicting a false positive and false negative when considering the reliability of an ILS component.

a) In Table 4-8B, a very large outage-free Period 5 raises the MTBO on a system which has incurred four outages in the preceding 500 hours of operation. Four outages in 500 hours clearly shows faltering reliability, but the MTBO figure itself shows a system suitable for CAT III RVR 600 operations. If this system has one more outage, the 10,000-hour period would no longer be in the preceding five periods, and the MTBO will drop substantially.

b) In Table 4-8C, the MTBO is decreased by four short periods caused by four outages over a 300-hour period. However, the system has operated for 3,700 hours without an outage, showing a strong indication that those problems have been repaired and increased system reliability. To get an MTBO of 4,000 hours in Table 4-8C, the system would have to operate for an additional 16,000 hours without an outage (20,000 total hours divided by five outage periods).

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3) Therefore, when Tech Ops informs the appropriate NextGen Branch (AXX-220) of predicted or projected MTBO that do not meet the requirements in Order 6750.24 and may require a downgrade, it is important to discuss the facility's history, factors which may be affecting MTBO, outages which were attributed to a common cause, repair history, trends affecting the MTBO, and the technician's confidence in both the repairs and the reliability of the system. When in doubt, the All Weather Operations Specialist (AWOS) should consult AFS-410 before making a decision to downgrade the ILS.

F. CoS Analyze. Navigation Services created and maintains the CoS Analyze program, which tracks all ILS facilities (LOC and GS) in the United States, including outage history, MTBO, and repair information. CoS Analyze is available to AWOS at http://cos.amc.faa.gov/cos/. CoS Analyze can be used by AFS inspectors to track ILS outages and MTBO for their specific region. The ILS CoS OPRs have usage rights within the CoS Analyze software to mitigate or exclude outages, add comments, and provide updates to system downgrade status. All of this information is available to other users on a read-only basis.

Figure 4-22. Active Periods Between Outages

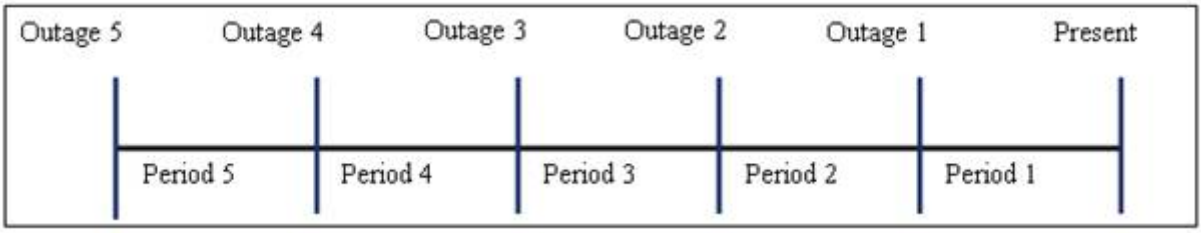

Table 4-8. Outage Consequences

Lowest ILS Minimum	Fourth Outage	Fifth Outage	Sixth Outage
CAT III RVR 300	CAT III RVR 300 N/A	CAT III N/A	CAT II/III N/A
CAT III RVR 700/600	No effect	CAT III N/A	CAT II/III N/A
CAT II	No effect	No effect	CAT II N/A

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Table 4-8A. Instrument Landing System Reinstatement Periods

Lowest ILS Minimum	Downgraded Minimum Due to System Outages	Outage Free Period to Restore CAT II	Outage Free Period to Restore RVR 700 or 600	Outage Free Period to Restore RVR 300
CAT III RVR 300	CAT I	4 weeks	2 weeks (6 total)	2 weeks (8 total)
CAT III RVR 300	CAT II	N/A	4 weeks	2 weeks (6 total)
CAT III RVR 300	CAT III RVR 700 or 600	N/A	N/A	4 weeks
CAT III RVR 700 or 600	CAT I	4 weeks	2 weeks (6 total)	N/A
CAT III RVR 700 or 600	CAT II	N/A	4 weeks	N/A
CAT II	CAT I	4 weeks	N/A	N/A

Table 4-8B. Mean Time Between Outages—False Positive

	Period	Hours
	Period 1	200
+	Period 2	100
+	Period 3	150
+	Period 4	50
+	Period 5	10000
	Total Hours =	**10500**
	MTBO =	**2100**

Table 4-8C. Mean Time Between Outages—False Negative

	Period	Hours
	Period 1	3700
+	Period 2	125
+	Period 3	75
+	Period 4	50
+	Period 5	50
	Total Hours =	**4000**
	MTBO =	**800**

RESERVED. Paragraphs 4-344 through 4-360.

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VOLUME 4 AIRCRAFT EQUIPMENT AND OPERATIONAL AUTHORIZATIONS

CHAPTER 14 GENERAL OPERATING AND FLIGHT RULES—MAINTENANCE ISSUES

Section 9 Safety Assurance System: Monitor Cockpit Voice Recorders

4-1551 REPORTING SYSTEM.

A. For Title 14 of the Code of Federal Regulations (14 CFR) Part 125 Use Program Tracking and Reporting Subsystem (PTRS) Activity Codes.

1) Maintenance:

- Ramp Inspection: 3627.
- Spot Inspection: 3628.
- Cockpit En Route Inspection: 3629.

2) Avionics:

- Ramp Inspection: 5627.
- Spot Inspection: 5628.
- Cockpit En Route Inspection: 5629.

B. For 14 CFR Parts 121 and 135 Use Safety Assurance System (SAS) Automation. This section is related to SAS Element 4.6.1 (AW) Avionics Special Emphasis Programs.

4-1552 OBJECTIVE. This section provides guidance in monitoring cockpit voice recorders (CVR) during spot, ramp, and cockpit en route inspections.

4-1553 GENERAL. Title 14 CFR requires that certain aircraft be equipped with a CVR that meets approved design and installation criteria. The regulations also stipulate that the data obtained from the CVR cannot be used in any civil penalty or certificate action.

NOTE: This does not negate the aviation safety inspector's (ASI) authority and responsibility to monitor the CVR during the performance of airworthiness surveillance functions.

A. Requirements of CVR Maintenance Procedures. The Avionics ASI is responsible for determining that the maintenance procedures ensure that tests are conducted according to procedures provided by the CVR manufacturer and shall include, at a minimum, listening to the recorded signals on each channel to verify that the audio is being recorded properly, is intelligible, and is free from electrical noise or other interference.

B. Monitoring the CVR. There are no restrictions in the regulations that prevent periodic monitoring of the CVR as a method of surveillance.

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1) ASIs are cautioned against monitoring CVR data for any purpose other than determining the quality of the recording.

2) Monitoring should be done only to the extent necessary to determine that the quality of reproduction and maintenance of the CVR is adequate.

C. Acoustic Underwater Locating Device (ULD) Maintenance.

1) To ensure the timely activation of ULDs associated with CVRs, Avionics ASIs should evaluate their certificate holder's maintenance and inspection programs to ensure that procedures for testing ULDs are conducted concurrently with battery replacement in accordance with manufacturer's recommendations.

2) Operators' maintenance or inspection programs should also be evaluated to ensure that operational testing is being accomplished, consistent with the recorder or ULD manufacturer's recommended procedures, at specified intervals and, when possible, in conjunction with a numbered or phase inspection (e.g., "A," "B," or "C" check).

3) These requirements must be reflected on work cards or other inspection cards to ensure system-wide compliance.

4-1554 PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. Experience with the equipment being inspected.

B. Coordination. This task requires coordination with the operator.

4-1555 REFERENCES, FORMS, AND JOB AIDS.

A. References. See Volume 6, Chapter 2:

- Section 4, Ramp Inspections for Part 91K, 125, 141, 142 Operators and Part 121 and 135 Air Carriers;
- Section 6, Conduct Spot Inspection of a Program Manager/Operator's Aircraft; and
- Section 9, Cockpit En Route Inspections.

B. Forms. FAA Form 8430-13, Request for Access to Aircraft.

C. Job Aids. None.

4-1556 PROCEDURES.

A. Initiate the Inspection. See Volume 6, Chapter 2, Sections 4, 6, and 9, as applicable.

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B. Monitor the CVR.

1) If this task is being done as part of an en route inspection, obtain permission from the pilot in command (PIC) before plugging into the CVR system.

NOTE: Be aware that not all phone jacks on CVR cockpit monitors are wired for operation.

2) If this task is being done as part of a spot or ramp inspection, accomplish the following:

a) Coordinate with the maintenance supervisor before conducting the inspection.

b) Monitor the in-progress maintenance to ensure that the CVR is being evaluated for performance of its intended function. Check all channels to ensure that the audio is being recorded properly, is intelligible, and is free from electrical noise or other interference.

3) Monitor the cockpit area microphone to ensure that it satisfactorily picks up all cockpit audio.

NOTE: Be aware that the quality of reproduction of some CVRs can be affected by ground operation of auxiliary power units (APU) and ground power units (GPU).

4) Review the certificate holder's maintenance procedures for acoustic ULDs to ensure that the manufacturer's recommendations are closely followed, including the procedures for the battery check.

C. Analyze Results. See Volume 6, Chapter 2, Sections 4, 6, and 9, as applicable.

4-1557 TASK OUTCOMES.

A. Complete the PTRS Record. For part 125.

B. Follow SAS Guidance Modules 4 and 5. For parts 121 and 135.

C. Complete the Task. See Volume 6, Chapter 2, Sections 4, 6, and 9, as applicable.

D. Document the Task. File all supporting paperwork in the applicant's office file.

4-1558 FUTURE ACTIVITIES. Follow SAS guidance.

RESERVED. Paragraphs 4-1559 through 4-1575.

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VOLUME 6 SURVEILLANCE

CHAPTER 9 PART 145 INSPECTIONS

Section 4 Safety Assurance System: Inspect a Part 145 Repair Station's Certificate Requirements

6-1685 REPORTING SYSTEM(S). For Title 14 of the Code of Federal Regulations (14 CFR) part 145 repair stations located inside and outside the United States with or without an agreement, use Safety Assurance System (SAS) automation and Data Collection Tools (DCT).

6-1686 OBJECTIVE. This section guides the aviation safety inspector (ASI) in inspecting a repair station's certificate requirements per part 145.

6-1687 GENERAL. Part 145, §§ 145.5, 145.207, 145.209, and 145.215 require that all Air Agency Certificates, operations specifications (OpSpecs), organizational charts, and capability lists are to be kept current and available for inspection and verification.

6-1688 COORDINATION REQUIREMENTS. If the repair station has an assigned principal maintenance inspector (PMI), and a principal avionics inspector (PAI), both inspectors should coordinate this inspection.

6-1689 PROCEDURES.

A. Review Applicable Information. Before the inspection, the principal inspector (PI) or ASI should carefully review:

1) Title 14 CFR parts 43 and 145.

2) Repair Station Manual (RSM) or Quality Control Manual (QCM).

3) OpSpecs.

4) Capability list, as required.

5) Repair Station Training Program.

6) The Safety Performance Analysis System (SPAS).

NOTE: For additional information on SPAS data, see Volume 10 of this order.

7) Enhanced Vital Information Database (eVID).

8) Certificate-holding district office (CHDO) file.

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B. Review Air Agency Certificate. Review the repair station's air agency certificate and OpSpecs; ensure the certificate and OpSpecs are:

1) Available for inspection.

2) Identical to those on file at the CHDO and properly signed.

3) Appropriate for the maintenance and alterations that personnel at the facility perform.

4) At the same revision level as the one on file at the CHDO, if the repair station uses a capability list.

5) Within the prescribed calendar limitation for the certificate of the repair station located outside the United States. (Certificates for repair stations located outside the United States have limited certificate duration. The Federal Aviation Administration (FAA) limits initial certification to 12 months from the date of issue of the certificate. After this initial time period, the FAA may renew the certificate or rating for a 24-month period if the repair station operated in accordance with the applicable requirements of part 145 during the initial 12-month time period. Verify that the duration of the certificate for repair stations located outside the United States is within the prescribed calendar limitations.)

NOTE: Verify the information in the current eVID matches the repair station information.

C. Does Repair Station Hold a Limited Rating? If the repair station holds a limited rating, a capabilities list or the repair station's OpSpecs must identify each article it maintains and alters. Each item on the capabilities list must have documentation to show that a self-evaluation was done to determine that the necessary housing, facilities, tools, test equipment, materials, technical data, processes, and trained personnel were available to accomplish the work. If the repair station uses a capabilities list, verify that it follows the procedures in its RSM or QCM for conducting self-evaluations and revising the list in accordance with § 145.215(c).

D. Review Organizational Chart. Verify that the repair station's organizational chart is current and is the same as the CHDO copy. Verify that the chart matches the duties listed in the RSM. Verify that all required information in the eVID is the same as the management listed in the organizational chart.

E. Does Repair Station Need OpSpec Paragraph A449? If the repair station contracts to perform work for a 14 CFR part 121 or 135 air carrier, or an operator defined in 14 CFR part 91, § 91.147, and conducts an anti-drug and alcohol misuse prevention program authorized by OpSpec A449, the ASI should issue OpSpec A449.

NOTE: OpSpec A449 is not issued to repair stations located outside the United States.

F. Verify Authorization to Perform Line Maintenance for Repair Stations Located Within the Domiciled Country. A repair station must have OpSpec paragraph D107

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authorizing them to perform line maintenance for certificate holders conducting operations under part 121 or 135, and for foreign air carriers or foreign persons operating a U.S.-registered aircraft in common carriage under 14 CFR part 129. At location(s) listed in OpSpec D107, verify that the repair station has the facilities, trained personnel, and technical data to perform such line maintenance. The repair station must keep equipment, tools, and material on the premises and under the repair station's control when performing work. The ASI should be able to determine that the repair station used proper tools and equipment for maintenance performed.

G. Verify Geographic Authorization for Repair Stations Located Outside the United States. If the repair station performs maintenance away from the repair station per geographic authorizations, OpSpec paragraph B050 lists these authorizations. The surveillance requirement for geographic authorization must follow the guidance in Volume 2, Chapter 11, Section 3.

H. Review Exemptions. If the repair station is authorized to conduct operations per the provisions, conditions, or limitations in an FAA exemption, OpSpec A005 would list that exemption. Review each exemption and verify that the repair station complies with its conditions and limitations.

I. Verify Data for Additional Fixed Locations. If the repair station is authorized to have additional fixed locations, OpSpec A101 must list the locations. Verify that the data is correct.

J. Analyze Findings. Follow SAS guidance for Module 5.

6-1690 REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions):

- Parts 43 and 145.
- Volume 10, Safety Assurance System Policy and Procedures.
- Advisory Circular (AC) 145-9, Guide for Developing and Evaluating Repair Station and Quality Control Manuals.
- AC 145-10, Repair Station Training Program.

B. Forms. None.

C. Jobs Aids. None.

6-1691 TASK OUTCOMES. Follow SAS guidance for Modules 4 and 5.

6-1692 FUTURE ACTIVITIES. Follow SAS guidance.

RESERVED. Paragraphs 6-1693 through 6-1706.

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VOLUME 6 SURVEILLANCE

CHAPTER 9 PART 145 INSPECTIONS

Section 20 Safety Assurance System: Inspect a Part 145 Repair Station Located Outside the United States (Non-Bilateral Aviation Safety Agreement (BASA) Maintenance Facility)

6-2036 REPORTING SYSTEM. Use Safety Assurance System (SAS) automation and the associated Data Collection Tools (DCT).

6-2037 OBJECTIVE. This section provides guidance for Flight Standards Service (AFS) personnel involved in certificate management on inspecting Title 14 of the Code of Federal Regulations (14 CFR) part 145 repair stations outside the United States.

6-2038 GENERAL.

A. Inspection Initiation. A risk-based inspection encompasses repair station Areas of Responsibility (AOR) associated with assigned SAS surveillance. While conducting surveillance, the aviation safety inspector (ASI) should verify the facility and personnel are qualified to perform the maintenance functions as listed in Federal Aviation Administration (FAA) operations specifications (OpSpecs) and the repair station's capability lists (CL). Inspection team size should be determined by International Field Office (IFO) management and based on the most efficient utilization of resources for the size and complexity of the repair station.

B. Work Away From a Fixed Location. The district office where the work is being performed may inspect repair stations working away from a fixed location. The ASI from the geographical office performing the inspection should maintain good communication with the parent facility's certificate-holding district office (CHDO) regarding such items as procedures, manuals, equipment, and personnel.

C. Inspector Conduct. ASIs assigned to an IFO must be conscious of sensitive issues when working in the international environment and must apply the highest degree of professionalism while assigned outside the United States. An ASI must be courteous and respectful when dealing with foreign nationals and the various officials of foreign aviation authority (AA). ASIs should understand that, while working for the FAA, his or her every action is representative of the U.S. Government. The FAA expects IFO employees to (1) be fully aware that they are guests in a foreign country, and (2) to recognize national culture within their working environment.

D. Joint Participation. As a professional courtesy and to encourage future agreements, ASIs may need to coordinate with foreign AA representatives to participate in the inspection. Foreign AA representatives may want to participate as observers during FAA repair station surveillance.

6-2039 COORDINATION REQUIREMENTS. If the repair station has an assigned principal maintenance inspector (PMI) and principal avionics inspector (PAI), the two inspectors should coordinate the inspection between them.

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6-2040 REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions):

- Advisory Circular (AC) 43-15, Recommended Guidelines for Instrument Shops.
- AC 43-207, Correlation, Operation, Design, and Modification of Turbofan/Jet Engine Test Cells.
- AC 65-31, Training, Qualification, and Certification of Nondestructive Inspection Personnel.
- AC 145-5, Repair Station Internal Evaluation Programs.
- AC 145-9, Guide for Developing and Evaluating Repair Station and Quality Control Manuals.
- Title 14 CFR Parts 43, 65, 121, 125, 135, and 145.
- Volume 2, Chapter 11, Section 1, Safety Assurance System: Introduction.
- Volume 2, Chapter 11, Section 2, Procedures for Certificating Part 145 Repair Stations/Satellites Located Within the United States and its Territories.
- Volume 2, Chapter 11, Section 3, International Field Office Procedures for Certificating/Renewing/Amending a Part 145 Repair Station Located Outside the United States and its Territories and not Under a Maintenance Implementation Procedure.
- Volume 2, Chapter 11, Section 4, Safety Assurance System: Evaluate a Part 145 Repair Station Manual and Quality Control Manual or Revision.
- Volume 2, Chapter 11, Section 5, Safety Assurance System: Evaluate Part 145 Repair Station Facilities and Equipment.
- Volume 3, Chapter 15, Section 1, Safety Assurance System: General.
- Volume 3, Chapter 42, Section 1, Safety Assurance System: Initial and Continual Oversight and Evaluation of Essential Maintenance and other Contract Maintenance Provider Programs and Contractual Agreements.
- Volume 6, Chapter 9, Section 7, Safety Assurance System: Inspect a Part 145 Repair Station's Manual System.
- Volume 6, Chapter 9, Section 8, Safety Assurance System: Inspect a Part 145 Repair Station's Housing and Facilities.
- Volume 6, Chapter 11, Section 17, Safety Assurance System: Inspect Avionics Test Equipment.
- Volume 10, Safety Assurance System Policies and Procedures.
- Volume 12, Chapter 13, Section 1, General Policy Guidance.
- Volume 12, Chapter 13, Section 2, Instructions for Flight Standards Service Offices.

B. Forms. None.

C. Job Aids. Job Task Analysis (JTA): 2.4.18.

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6-2041 PROCEDURES.

A. Review Applicable Information. Before inspecting, the ASI should carefully review:

1) Parts 43 and 145.

2) Repair Station Manual (RSM) or Quality Control Manual (QCM).

3) OpSpecs.

4) Safety Performance Analysis System (SPAS).

5) Enhanced Vital Information Database (eVID) or Vitals tab in the configuration module in SAS automation.

6) CHDO file.

7) If there is a corrective action plan (CAP) from the previous year's inspection/renewal, the ASI must review that plan, and the inspection will verify that those deficiencies/findings have been corrected.

B. Conduct an In-Briefing and Debriefing. Brief the certificate holder on the purpose of the inspection. This in-brief may take place at the beginning of the inspection or at the beginning of each day. Brief the certificate holder on the inspection results. Discuss any deficiencies and possible corrective actions. You can find detailed instructions for conducting this briefing in Volume 1, Chapter 3, Section 1, Safety Assurance System: Responsibilities of Aviation Safety Inspectors.

C. Conduct the Inspection. Use the SAS data collection tools and processes located in Volume 10.

D. Findings and Deficiencies. Due to the distance, travel, and expense associated with repair stations located outside the United States, apply the following policy regarding deficiencies/findings noted during the inspection:

1) If the FAA discovers deficiencies while conducting an inspection, the FAA may allow the applicant sufficient time after notification to correct the deficiencies or to submit a plan for corrective action (depending on the nature of the deficiencies).

2) Once the applicant has submitted the CAP and prior to acceptance of the plan, the ASI will review it and ensure it meets the following requirements:

a) The timeframe for correcting the deficiencies/findings must be 90 days or less.

b) The correction plan must adequately address the deficiencies/findings contained in the report to the repair station.

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c) The plan must contain a requirement for the applicant to advise the ASI in writing when the deficiencies/findings have been corrected.

d) The plan must also contain a procedure for the repair station to validate the process/procedure that was used to correct the deficiencies/findings. This validation should take place no more than 90 days after the correction was implemented.

6-2042 TASK OUTCOMES.

A. Complete the Task. Completion of this task will result in one or more of the following:

- A satisfactory inspection with no deficiencies;
- Tracking deficiency corrective actions in the Action Item Tracking Tool (AITT); or
- Sending a letter to the operator documenting all deficiencies and initiating an Enforcement Investigation Report (EIR).

B. Document the Task. Follow SAS guidance for Modules 4 and 5 for data collection and reporting, along with and PI analysis, assessment, and action (AAA). Outcome tracking may be via the AITT. Place all supporting paperwork in the certificate holder's office file. Update the Vitals in the configuration module, as required.

6-2043 FUTURE ACTIVITIES. Follow SAS guidance to plan future risk-based surveillance in SAS.

RESERVED. Paragraphs 6-2044 through 6-2057.

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VOLUME 10 SAFETY ASSURANCE SYSTEM POLICY AND PROCEDURES

CHAPTER 1 GENERAL

Section 1 Safety Assurance System

10-1-1-1 GENERAL. This chapter explains the policy, concepts, principles, roles and responsibilities, acronyms, and definitions for the Safety Assurance System (SAS).

A. Purpose. The purpose of this section is to provide an overview of SAS, including statutory background, key concepts, and principles.

B. Scope. This section applies to all SAS users.

10-1-1-3 RESERVED.

10-1-1-5 BACKGROUND.

A. Statutory Authority. Title 49 of the United States Code (49 U.S.C.) and Title 14 of the Code of Federal Regulations (14 CFR) provide the statutory and regulatory authority for SAS, respectively. Title 49 U.S.C. is broad in scope and contains the codified provisions of the Federal Aviation Act of 1958 (FA Act), which prescribes the powers and authorities of the Federal Aviation Administration (FAA). Title 14 CFR is prescriptive in nature and contains specific requirements to obtain a certificate holder operating or air agency certificate and standards for conducting related operations. SAS is not a separate safety standard and does not impose additional requirements on certificate holders. The SAS policy and procedure provide aviation safety inspectors (ASI) with standardized protocols to evaluate certificate holder programs required by regulations to be approved or accepted. The following requirements in 49 U.S.C., Subtitle VII, Chapter 447, Safety Regulation, are applicable to SAS:

1) Title 49 U.S.C., Section 44702, Issuance of Certificates. "When issuing a certificate under this chapter, the Administrator shall consider the duty of an air carrier to provide service with the highest possible degree of safety in the public interest."

2) Title 49 U.S.C., Section 44705, Air Carrier Operating Certificates. "The Administrator shall issue an air carrier operating certificate to a person desiring to operate as an air carrier when the Administrator finds, after investigation, that the person properly and adequately is equipped and able to operate safely under this part and regulations and standards prescribed under this part."

3) Title 49 U.S.C., Section 44707, Examining and Rating Air Agencies. The Administrator is authorized to provide for the examination and rating of air agencies, such as civilian flight schools, repair stations, and other air agencies. The Administrator is also authorized to issue certificates for these flight schools, repair stations, and air agencies.

B. Policy Statement of the FAA as it Pertains to Promoting Aviation Safety for Certificate Holders. SAS is a system safety approach to oversight based on our policy. The FAA follows a regulatory policy, which recognizes the obligation of the certificate holder to

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maintain the highest possible degree of safety. SAS implements our policy by providing safety controls (i.e., regulations and application) of business organizations and individuals who fall under FAA regulations. Under SAS, our primary responsibilities are to:

- Verify an applicant can operate safely and comply with the regulations and standards before issuing a certificate and approving or accepting programs;
- Conduct periodic reviews to verify that a certificate holder continues to meet regulatory requirements when the environment changes; and
- Validate the performance of a certificate holder's approved and accepted programs for the purpose of Continued Operational Safety (COS).

C. SAS Concepts and Principles.

1) Definitions of Safety and Risk. Safety is the state in which the risk of harm to people or property damage is reduced to and maintained at or below an acceptable level through a continuing process of hazard identification and risk management (RM). In this context, a certificate holder's duty is to provide service with the highest degree of safety in the public interest. The certificate holder must identify hazards in its operating environment and manage the associated risks. Similarly, a certificate holder's ability to manage risk is an important part of our determination to ensure that the certificate holder is equipped to operate safely under 49 U.S.C. and the regulations and standards prescribed by 14 CFR.

2) System Safety. The goal of system safety is to optimize safety by the identification of hazards within an environment and to eliminate or control their associated risk. We do this by performing Design Assessments (DA) and Performance Assessments (PA) based on system safety principles. Certificate holders fulfill their responsibilities by designing operating systems that manage hazard-related risks and by providing service with the highest degree of safety in the public interest. These concepts are fundamental to SAS. The FAA uses a risk-based, data-supported system approach to conduct oversight that validates the certificate holder's ability to manage risk and to achieve safety objectives.

3) Safety Attributes. The key to safety is managing safety-critical processes. This is a responsibility of a certificate holder in meeting the regulatory obligations. Safety attributes provide a foundation for the tools so that principal inspectors (PI) can make informed decisions about the certificate holder's operating systems (1) before approving or accepting them when required to do so by the regulations, and (2) during recurring performance assessments. Every Data Collection Tool (DCT) question is based on one of the Safety Attributes listed in Table 10-1-1A, Safety Attributes.

4) Risk. The combination of predicted severity and the likelihood of the potential effect of a hazard.

5) Hazard. 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.

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Table 10-1-1A. Safety Attributes

Safety Attributes	Description
Responsibility	A clearly identifiable, qualified, and knowledgeable person who is accountable for the quality of a process.
Authority	A clearly identifiable, qualified, and knowledgeable person who has the authority to set up and change a process.
Procedures	Documented methods to accomplish a process.
Controls	Checks and restraints designed into a process to ensure a desired result.
Process Measures	Used to validate a process and identify problems or potential problems in order to correct them.
Interfaces	Interactions between processes that must be managed in order to ensure desired outcomes.

D. Focus on a Certificate Holder's Organization and Processes. The FAA issues certificates, monitors compliance, investigates noncompliance, administers sanctions, and focuses on a certificate holder's organization and process management. We monitor outputs and outcomes, but place emphasis on the certificate holder's ability to develop a safe process and to correct deficiencies. PAs must supply objective evidence of both the adequacy and inadequacy of processes.

E. Open System Perspective. A successful open system adapts to the needs of the environment and its resources. Safe operation in the aviation environment requires constant adaptation. Certificate holders must provide systems that defend against the hazards in the operating environments, including adapting to changes. DCT are used to collect information on risks and on the certificate holder's ability to control them.

F. Data Sharing. The FAA is responsible for reaching an assessment of a certificate holder's or applicant's qualification to hold an operating certificate and to comply with regulations and standards. A qualified ASI may accomplish a DA with information provided by the certificate holder, applicant, or third party, such as the Department of Defense (DOD) or Department of Transportation (DOT), or the European Aviation Safety Agency (EASA), as long as a qualified ASI validates the data. Data sharing and open communication optimizes the oversight system and leverages resources to advance safety.

NOTE: If PIs or certification project managers (CPM) provide the certificate holder or applicant with information collected or stored in SAS to help illustrate an observation, the information must be summarized. DO NOT provide screen shots from SAS automation or data from ASI comments to those outside the agency. This information is protected by the Freedom of Information Act (FOIA). See subparagraph H for more information on FOIA.

G. Primary Stakeholder and Beneficiary. The U.S. public is the primary stakeholder and beneficiary of SAS. The FAA carries out the safety mission required by statute in the interest

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of the public. ASIs are responsible for determining on behalf of the public that certificate holders can provide service with the highest possible degree of safety.

H. Freedom of Information Act (FOIA). Records are processed under FOIA in accordance with DOT and Government-wide directives and guidance. The current edition of FAA Order 1270.1, Freedom of Information Act Program, provides guidance that governs processing requests for FAA records under FOIA.

I. Security Risks. Security is an important feature of the SAS automation. If a SAS user detects a security breach or there is an indication of a security risk, the SAS user should immediately notify the office SAS Security Auditor. Some examples of a security breach or a risk include:

1) Unauthorized or unintended activity or misuse by authorized database users, database administrators, or network/systems managers, or by unauthorized users or hackers (e.g., inappropriate access to sensitive data, metadata, or functions within databases, or inappropriate changes to the database programs, structures, or security configurations).

2) Malware infections causing incidents such as unauthorized access, leakage, or disclosure of personal or proprietary data; deletion of or damage to the data or programs; interruption or denial of authorized access to the database; attacks on other systems; and the unanticipated failure of database services.

3) Overloads, performance constraints, and capacity issues resulting in the inability of authorized users to use databases as intended.

4) Design flaws and programming bugs in databases and the associated programs and systems, creating various security vulnerabilities (e.g., unauthorized privilege escalation), data loss/corruption, performance degradation, etc.

5) Data corruption and/or loss caused by the entry of invalid data or commands, mistakes in database or system administration processes, sabotage/criminal damage, etc.

J. Master List of Functions (MLF) Element and Program Tracking and Reporting Subsystem (PTRS). For the purpose of data mining and regional reporting, it is highly recommended that if there is a related MLF element, the ASI should add it in the “Local Use” field for the following PTRS items:

1) Accidents.

a) Operations: 1702, 1703, 1761.

b) Maintenance: 3702, 3703, 3761.

c) Avionics: 3702, 3703, 3761.

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2) Incidents.

a) Operations: 1711, 1712, 1725.

b) Maintenance: 3711, 3712, 3720.

c) Avionics: 5711, 5712, 5720.

3) Occurrences.

a) Operations: 1711, 1712, 1725.

b) Maintenance: 3711, 3712, 3720.

c) Avionics: 5711, 5712, 5720.

4) Extended Operations (ETOPS) Events. 4633, 6633.

10-1-1-7 through 10-1-1-29 RESERVED.

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VOLUME 10 SAFETY ASSURANCE SYSTEM POLICY AND PROCEDURES

CHAPTER 1 GENERAL

Section 2 Safety Assurance System: Introduction to SAS Business Process and Tools

10-1-2-1 GENERAL.

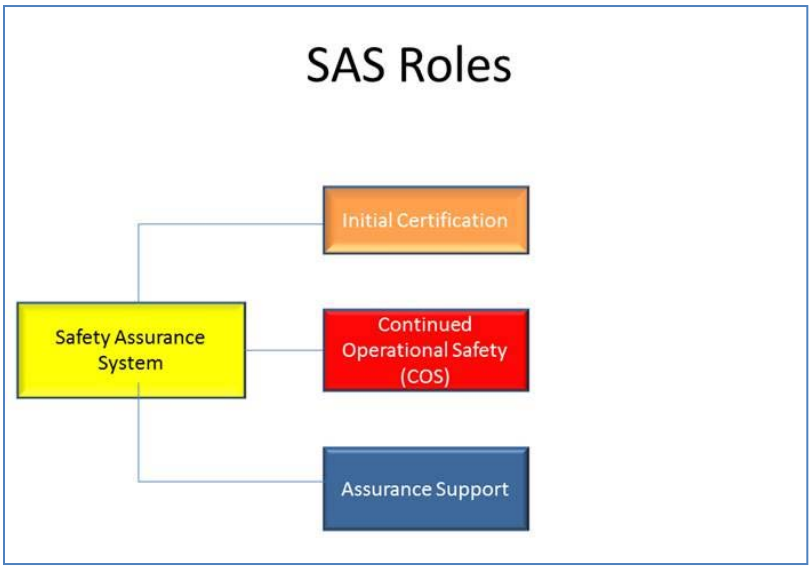
A. Purpose. The purpose of this section is to introduce the general principles, business process, and tools that support the foundation of the Safety Assurance System (SAS).

B. Scope. This section applies to all SAS users.

10-1-2-3 RESERVED.

10-1-2-5 BACKGROUND. The current Federal Aviation Administration (FAA) oversight processes have resulted in the safest aviation system in the world. To continuously improve this safety record, the FAA saw the need to develop a standardized risk-based, data-supported oversight system for all commercial operations. SAS is the process to assess the initial certification, routine surveillance, and certificate management for Title 14 of the Code of Federal Regulations (14 CFR) parts 121, 135, and 145 certificate holders or applicants. SAS is based on system safety principles, Safety Attributes, and a risk management process (RMP) to identify hazards and prevent loss of equipment and other property. SAS is designed based on three roles: Initial Certification, Continued Operational Safety (COS), and Assurance Support, as shown in Figure 10-1-2A, SAS Roles.

Figure 10-1-2A. SAS Roles



A. Initial Certification. The role of Initial Certification is to assess whether applicants can conduct business that complies with the regulations and FAA policy and guidance.

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B. Continued Operational Safety (COS). The role of COS includes the functions of routine surveillance and certificate management. The purpose of this function is to assess whether a certificate holder complies with regulatory standards and manages risk.

C. Assurance Support. This is a function of the Flight Standards National Field Office (FSNFO) (AFS-900). The role of Assurance Support is to keep the SAS program current and complete, which includes maintaining Data Collection Tools (DCT), automation version control, and feedback.

D. Safety Management Systems (SMS). An SMS is a formal, top-down, organization-wide approach to managing safety and assuring the effectiveness of safety risk controls. SMSs include systematic procedures, practices, and policies for the management of safety (refer to 14 CFR part 5). SMSs consist of four main components: Safety Policy, Safety Risk Management (SRM), Safety Assurance (SA), and Safety Promotion. See Volume 17, Safety Management System; Notice 8900.281, Safety Management Systems (SMS) – Approval of Part 121 Certificate Holders' SMS Implementation Plans; and the current edition of Advisory Circular (AC) 120-92, Safety Management Systems for Aviation Service Providers.

E. System/Subsystem Performance Assessment (SPA) and Element Performance Assessments (EPA). Performance Assessments (PA) are used to determine if the certificate holder's or applicant's operating systems are producing the intended results, as well as to confirm the certificate holder's or applicant's risk assessment is occurring through their monitoring process and they are taking appropriate corrective action when needed. This includes mitigation or control of hazards and risks and the ability to detect latent, systemic failures that may occur over time or due to subtle environmental changes.

1) SPAs consist of System or Subsystem Performance (SP) DCTs that are planned with a baseline of 6 months, 1 year, or 2 years.

2) EPAs consist of Element Performance (EP) DCTs that are planned as a result of risk, previous findings, or as determined by the principal inspector (PI).

3) An EPA should be accomplished following the completion of an Element Design Assessment (EDA) to verify the certificate holder's or applicant's system is performing as intended.

F. Element Design Assessment (EDA). EDAs are an important function of SAS because safety is the outcome of a properly designed system. Poor system design compromises SRM. EDAs are used to ensure a certificate holder's or applicant's operating systems are designed to comply with the intent of regulations and system safety. EDAs consist of Element Design (ED) DCTs that are planned or a result of risk, previous findings, or as determined by the PI.

1) EDAs are used during certification to ensure an applicant's operating systems are designed to comply with the intent of the regulations. EDAs use a standardized, systematic approach to determine an applicant's qualification for an operating certificate.

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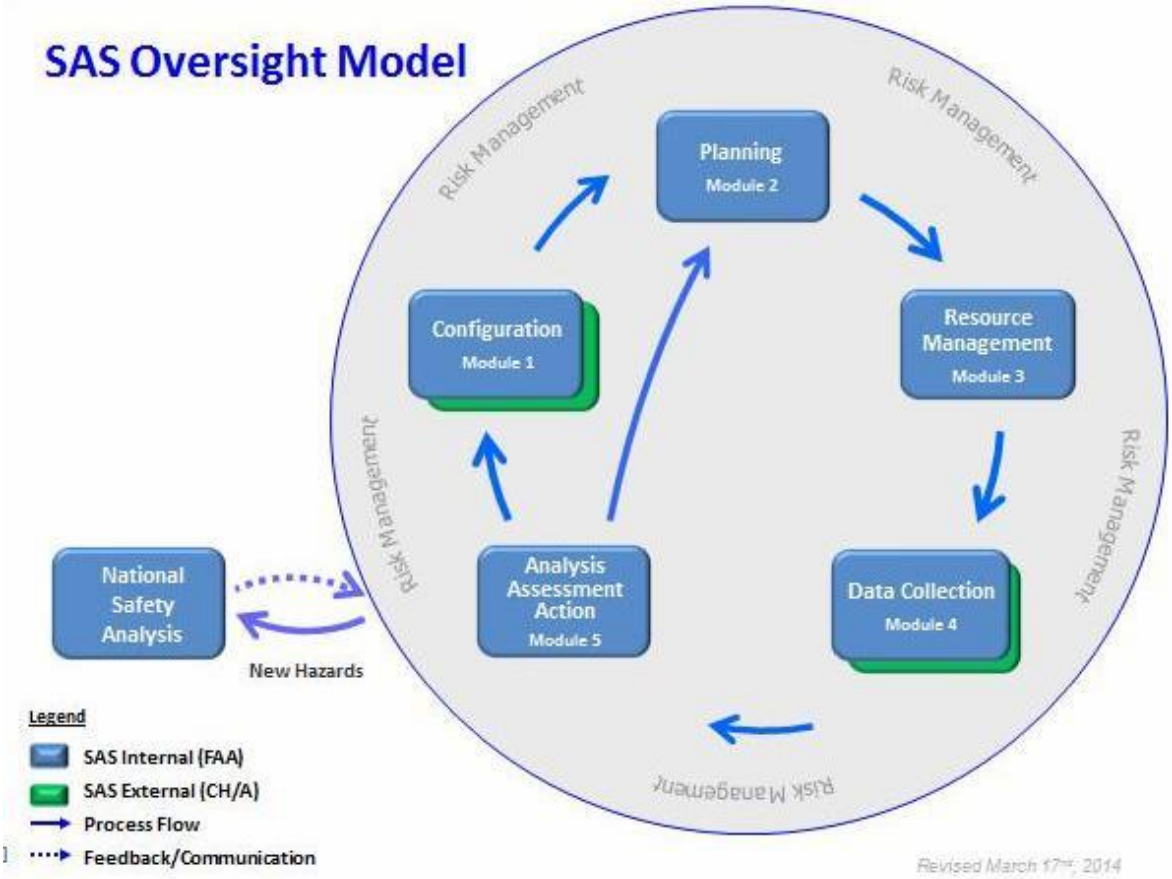
2) EDAs are used in certificate management oversight to approve or accept new or changed programs. EDAs verify that the certificate holder's systems are designed to meet the intent of regulatory requirements during new program reviews, performance issues, FAA-initiated changes, or when the PI determines the need.

G. SAS Oversight Model. The following model in Figure 10-1-2B illustrates the relationship of the five business process modules, National Safety Analysis (NSA), and risk management (RM). RM is defined as a process composed of describing the system; identifying the hazards; and analyzing, assessing, and controlling risk. The certificate holder or applicant has access to the Configuration (Module 1) and Data Collection (Module 4) through the external portal. RM is inherent within the five modules through the planning, executing, and assessing of the collected data. Situations that require a more indepth look may require the use of the RMP to document and manage resources for additional oversight.

Figure 10-1-2B. SAS Oversight Model



H. Description of Business Process. SAS incorporates five business process modules for the Initial Certification and COS of certificate holders or applicants. The application of each process may be different depending on whether aviation safety inspectors (ASI) are conducting a PA or Design Assessment (DA). The overall purpose of each module is as follows:

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1) Module 1—Configuration. The PI/certification project manager (CPM) uses the configuration process to assess a certificate holder's or applicant's request for a new or changed scope of operation and to develop a Certificate Holder Operating Profile (CHOP). The operating profile contains DCTs scoped to the certificate holder's or applicant's type of operation. The certificate holder or applicant has access to the configuration module through the external portal.

2) Module 2—Planning. The PI/CPM uses the planning process to develop a risk-based, data-supported plan for SPAs. This module contains the Certificate Holder Assessment Tool (CHAT) and the Comprehensive Assessment Plan (CAP).

3) Module 3—Resource Management. The Frontline Manager (FLM) uses the resource management process to assign work and manage resources for the execution of the data collection plan.

4) Module 4—Data Collection, Data Reporting, and Data Review. The data collection process consists of data collection, data reporting, and data review. The certificate holder or applicant has access to scoped DCTs through the external portal.

a) Data Collection. The ASI uses the data collection process to collect data while conducting oversight of the certificate holder's or applicant's process design and performance. The purpose of collecting data is to gather information that PIs/CPMs use to make informed decisions about the certificate holder's or applicant's operating systems: (1) before approving or accepting them when required to do so by the regulations, and (2) during recurring PAs.

b) Data Reporting. The ASI/aviation safety technician (AST) or aviation safety assistant (ASA) uses the data reporting process to transfer collected data into the automation.

c) Data Review. The data reviewer uses the data review process to evaluate reported data based on the data quality guidelines (DQG).

5) Module 5—Analysis, Assessment, and Action (AAA). The AAA consists of analysis, assessment, and action.

a) Analysis and Assessment. The PI/CPM uses the analysis and assessment process to make informed decisions about the certificate holder's or applicant's operating systems: (1) before approving or accepting them when required to do so by the regulations, and (2) during recurring PAs.

b) Action. The PI/CPM uses the action process to determine a course of action based on the decisions made during analysis and assessment of negative findings. These items are tracked in the Action Item Tracking Tool (AITT).

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I. External Portal.

1) The external portal is a secure, user-friendly, Web-based interface for the certificate holder or applicant. The certificate holder or applicant can use the external portal to submit or view current editions of the following information:

- Configuration data;
- Preapplication Statement of Intent (PASI);
- FAA Form 8310-3, Application for Repair Station Certificate and/or Rating;
- Scoped ED DCTs (Module 4);
- Changes to scope of operations;
- Change requests to their certificate;
- Submit correspondence;
- Manuals; and
- Minimum equipment list (MEL) revisions.

2) The use of the external portal is mandatory for new applicants and highly encouraged for existing certificate holders. Users will enter their request for access in the SAS access request page. An automated email is sent to the user for email verification. Once the user submits all required information, the request for external portal access is routed to the user's respective certificate-holding district office (CHDO). See the SAS External Portal User Guide for more information.

J. SAS Communications.

1) SAS uses several different forms of communications in automation:

a) Broadcasts. Alerts that are sent by AFS-900 personnel. They are typically used to communicate news of general interest, such as system downtime or the announcement of a new or changed policy. Broadcasts may be sent to internal SAS users or to specific segments of the SAS user community.

b) Notifications. Alerts that are auto-generated by SAS and sent to both internal and external users to inform them of workflow updates or data changes.

c) Messages. Direct communications that can be sent between PIs and certificate holders/applicants. Messages can be used to announce action items or to share documents. All members of the Certificate Management Team (CMT) or certificate holder/applicant external portal users are able to view messages.

Messages Sent By	Are Routed To
Certificate Holder/Applicant	Certificate Holder's/Applicant's FAA CMT
PI/CPM User to Certificate Holder/Applicant	Certificate Holder/Applicant External Portal users and Certificate Holder's/Applicant's FAA CMT

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2) An external portal user or PI/CPM can view, initiate, and reply to communications from the Notifications, Messages, and Broadcasts tiles on the individual's SAS home page. Each communications tile includes a tally in its header bar that shows the total number of new (unread) items received.

K. National Safety Analysis (NSA).

1) NSA is a key foundational component of SAS. NSA is a national-level function providing the analytical support to: identify new hazards or safety issues within the aviation community overseen by Flight Standards Service (AFS), assess adverse trends in safety performance, and evaluate the effectiveness of existing safety risk controls. 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. During analysis, the PIs/CPMs have the ability to identify and record previously unknown hazards (e.g., something related to Automatic Dependent Surveillance–Broadcast (ADS-B), the new Boeing B-787 aircraft, or Next Generation Air Transportation System (NextGen)).

2) The objectives of NSA are to:

- Identify national-level safety hazards;
- Perform risk analysis associated with identified national-level safety hazards;
- Develop recommendations and strategies to address national-level hazards and risks;
- Provide aggregated reporting of SAS data to support decisionmaking at the local and national levels; and
- Develop recommendations, as appropriate, for SAS business process improvements.

L. Process Flowcharts. Each process module in this volume contains a process flowchart. The flowcharts illustrate responsibility for the process steps using horizontal bands called "swim lanes." Figure 10-1-2C, Configuration Process Flowchart—Swim Lanes, is an illustration of swim lanes. Figure 10-1-2D, Standard Flowchart Symbols, contains symbols used to indicate the various steps or tasks included in the flowchart.

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Figure 10-1-2C. Configuration Process Flowchart—Swim Lanes

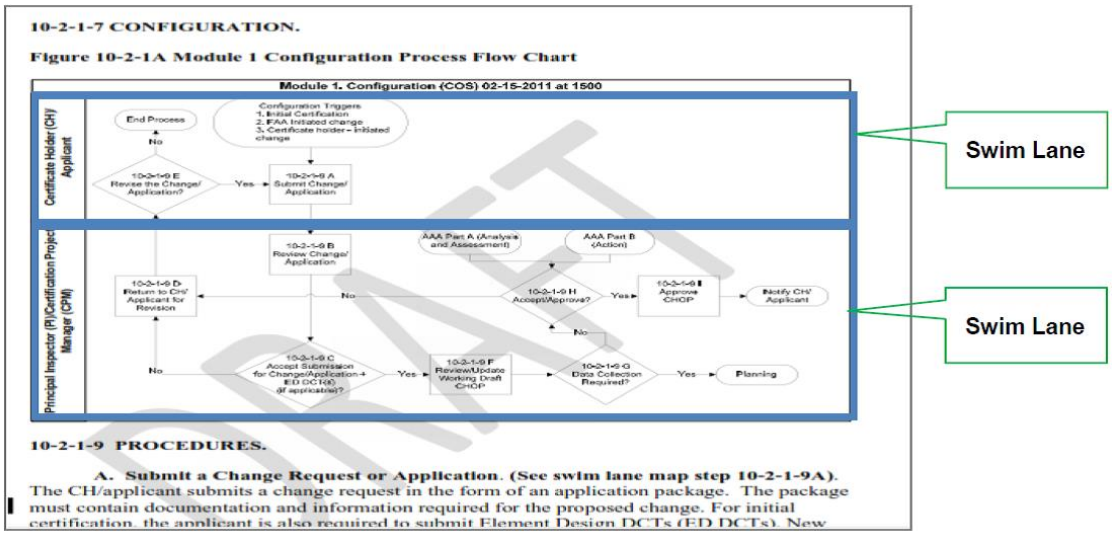
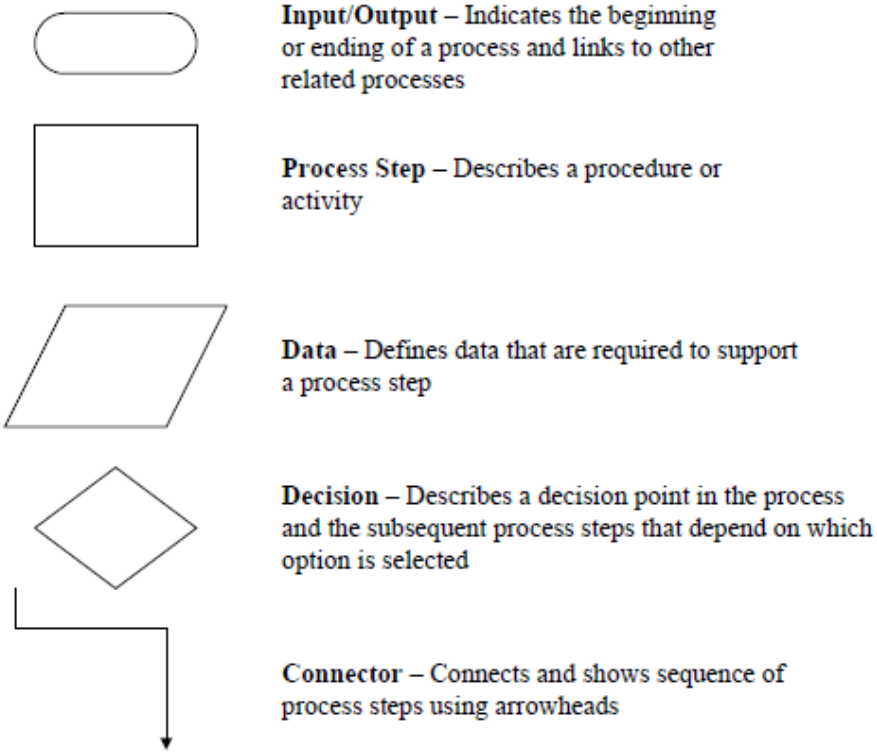


Figure 10-1-2D. Standard Flowchart Symbols



M. Application of System Safety Concepts. Figure 10-1-2E, System Safety Process Model, illustrates the system safety process design. The certificate holder/applicant performs Safety Risk Management (SRM) whenever a change occurs or is introduced into the design of the system. This allows the certificate holder/applicant to identify associated hazards, complete a risk analysis, and perform a risk assessment. If risk is found during the SRM process, the

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certificate holder/applicant should implement a risk control action plan. Once the design of the system is accepted, approved, or put into operation, the certificate holder/applicant should make system assessments by monitoring system performance. This is done by collecting and analyzing data, and performing corrective action for problem resolution. The ASI validates the certificate holder/applicant's design and performance of their system safety processes.

Figure 10-1-2E. System Safety Process Model

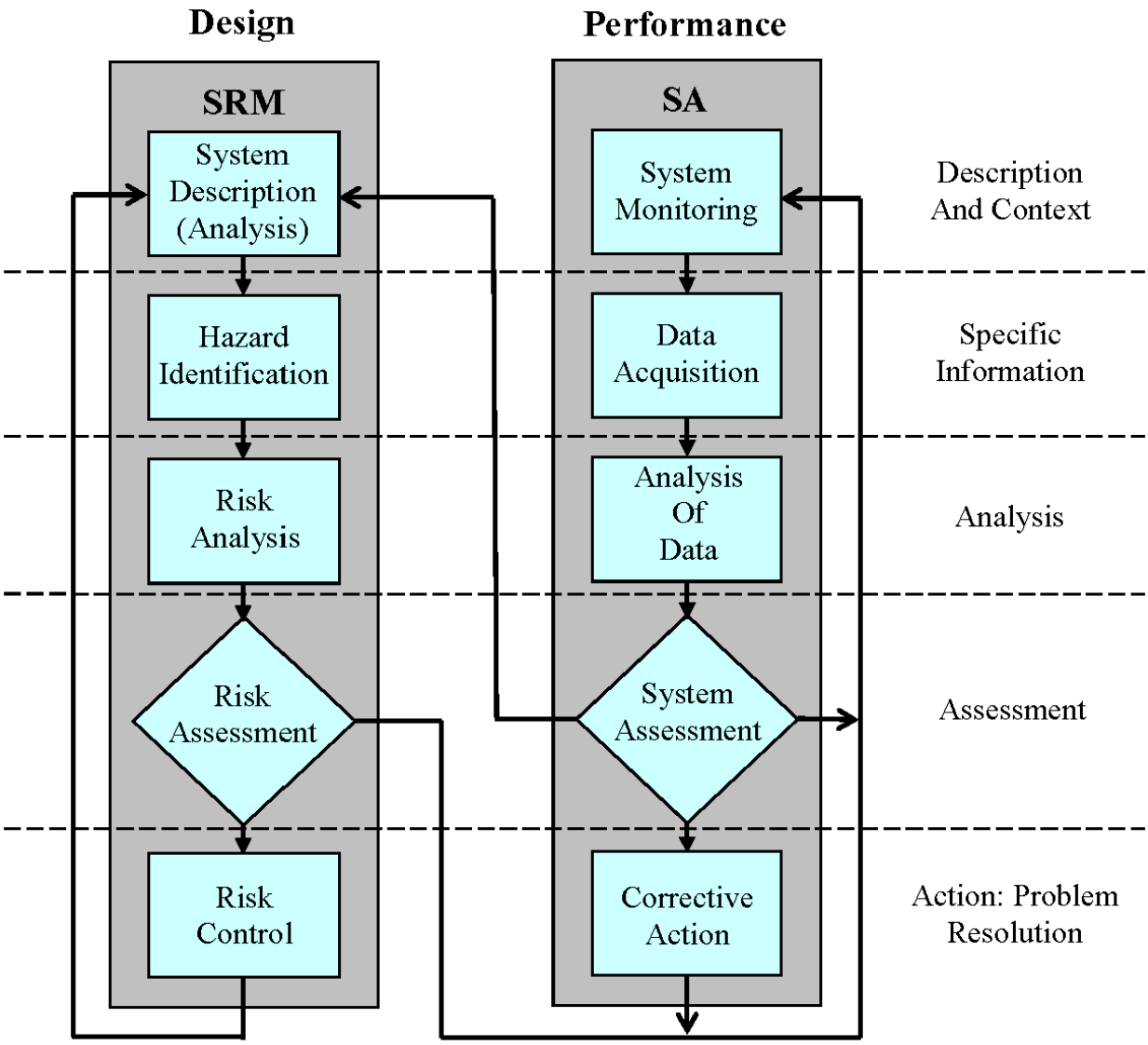

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Table 10-1-2A. Comparison of the System Safety Process and SAS Business Process

System Safety Process Step	SAS Business Process
Description and Context. Define the acceptable levels of safety. How does the system work and how do its components interact?	Module 1 Configuration. Regulations and policy define the acceptable level of safety. System description begins with the Certificate Holder Operating Profile (CHOP).
Specific Information. Where are the hazards in the system? What can go wrong?	Modules 1-5. Affirm safety risk related to hazards within system and operational environment is being effectively managed and mitigated.
Analysis. Determine the potential consequences that could result if hazards are not addressed or corrected.	Module 5 Analysis and Assessment. Principal inspectors (PI) analyze data to identify hazards and determine the level of risk associated with a hazard.
Assessment. What can be done to control the effects of the hazard and/or mitigate the associated levels of risk?	Module 5 Action. PIs identify a course of action to control the effects of the hazard and/or mitigate unacceptable levels of risk.
Action: Problem Resolution. Did the action work?	Module 2 Planning. PIs determine if the action eliminated the hazard or lowered the level of risk to acceptable levels. If not, then take additional action.

N. Master List of Functions (MLF). SAS uses a common structured process to analyze how systems/subsystems and elements interface. The MLF forms the basis for the system-based approach in SAS.

1) Each peer group has a defined set of systems, subsystems, and elements. A system is defined as 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 requirement. Elements are programs or actions that the certificate holder or applicant completes to support the systems/subsystems. See Figure 10-1-2F, Master List of Function (System/Subsystem Level), as an example of a system/subsystem-level MLF.

2) There are 6 systems, 22 subsystems, and 89 possible elements. Parts 121, 135, and 145 each have their own unique system/subsystem and elements based on peer group and scope of operation. See Table 10-1-2B, Mapping of Program Elements to Master List of Functions (SAS Approved Numbering), for the MLF list by peer group.

O. Peer Groups. Peer groups are categorized by 14 CFR part and operational description. Each certificate holder or applicant is placed into one or more peer groups as determined by their type of operations. See Figure 10-1-2G, Peer Groups and DCT Association, for the peer group list by 14 CFR part.

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Figure 10-1-2F. Master List of Functions (System/Subsystem Level)

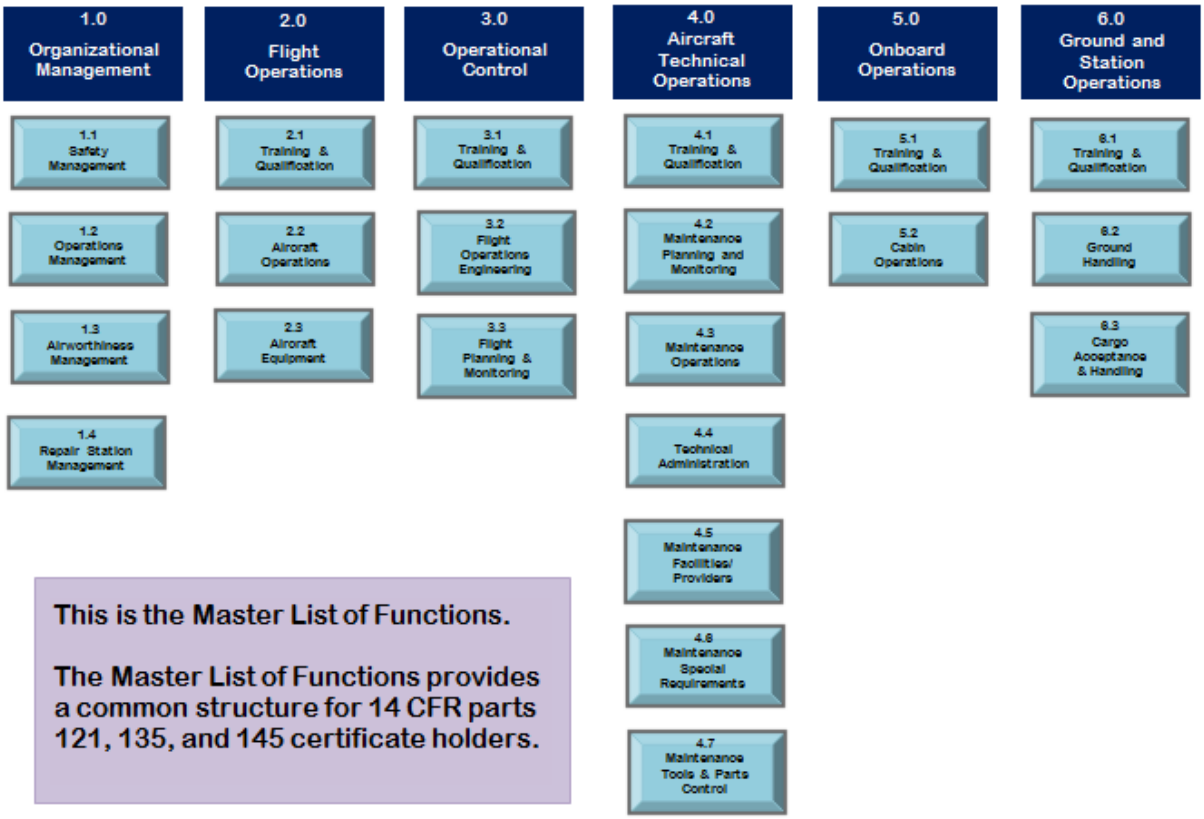

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Figure 10-1-2G. Peer Groups and DCT Association

Part	Peer Group	Certificate Holder Peer Groups	MLF Level for DCTs		
			SP DCTs	EP DCTs	ED DCTs
121	A	Part 121 Certificate Holders	Subsystem	Element	Element
135	B	Part 135 (10 or more seats)	Subsystem	Element	Element
	C	Part 135 (9 or less seats)	System	Element	Element
	D	Part 135 (9 or less seats - single pilot only)	System	Element	Element
	E	Part 135 (HAA)	Subsystem	Element	Element
145	F	Part 145 Within U.S.	System	Element	Element
	G	Part 145 Outside U.S. without Aviation Safety Agreement	System	Element	Element
	H	Part 145 Outside U.S. with Aviation Safety Agreement	System	Element	Element

P. SAS Tools. SAS tools are located within the modules of SAS to standardize the process of Initial Certification and COS. They include:

1) Certificate Holder Operating Profile (CHOP). The operating profile is located in Module 1 and the main purpose of this 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 SAS-only data, which are 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.

2) Certificate Holder Assessment Tool (CHAT). The CHAT is an automated tool for each certificate holder and specialty that contains a series of risk indicators and PI options, which help the PI assess risk. The output of the CHAT will assist the PI to justify changes in resource order on the CAP. The CHAT is updated based on the results of Module 5, AAA. Module 5 closes the loop in the SAS model. The CHAT is reviewed after the AAA, or at least annually.

3) Comprehensive Assessment Plan (CAP). The CAP is a tool used for planning, documenting, and tracking assessments. The PI/CPM uses the CAP to schedule, adjust resource order, plan due dates of assessments, and to record the reasons for making those adjustments. The CAP is a 2-year plan.

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4) Action Item Tracking Tool (AITT). The AITT is located in Module 5, and PIs use the AITT to track corrective actions that result from Module 5 or other oversight functions. 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 SAS automaton, such as AAA, CHAT, data collection, and AITT itself. The AITT does not replace documentation requirements specified in other guidance.

5) Risk Management Process (RMP)/New Hazard. The RMP and new hazard process is an interactive management activity dedicated to assuring that hazards are identified, documented, eliminated, or controlled within the program.

6) System or Subsystem Performance Data Collection Tool (SP DCT). SP DCTs are located in Module 4. ASIs use SP DCTs to collect data for the SPA based on a specific interval. Intervals are defined as 6 months (high criticality), 1 year (medium criticality), or 2 years (low criticality).

7) Element Performance Data Collection Tool (EP DCT). EP DCTs are located in Module 4. ASIs use the EP DCTs to collect data for the EPA. EP DCTs can be created on an as-needed basis.

8) Element Design Data Collection Tool (ED DCT). ED DCTs are located in Module 4. ASIs use the ED DCTs to collect data for an EDA. A certificate holder or applicant uses ED DCTs during Initial Certification to document the results of self-audits. ED DCTs can be created on an as-needed basis.

9) Essential Maintenance Provider (EMP). 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.

10) Custom Data Collection Tool (C DCT). C DCTs are used to collect data on specific areas of immediate concern outside of the normal planning schedule as well as to collect data on functions not covered by EP DCTs and ED DCTs.

a) A PI can create a C DCT to include:

- Both scoped and unscoped questions.
- Design questions.
- Performance questions.

b) A PI cannot create a C DCT to include:

- Combine design and performance questions.
- Combine Airworthiness and Operation questions.

c) When the PI builds a C DCT, they can indicate whether they want it assessed in its entirety in Module 5, or whether they want the individual questions be included back into

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their original SP, EP, or ED DCT and assessed the next time the associated system, subsystem, or element is assessed.

d) National/Regional C DCTs. A National/Regional C DCT is a template C DCT that consists of questions for focused inspections. A National/Regional C DCT created from a template will automatically go through the AAA.

1. To request a National/Regional C DCT you must submit a SAS Assistance, Feedback, or Enhancement (SAFE) Process on the SAFE SharePoint at: https://avssp.faa.gov/avs/afs900/CIPO/PRF/SitePages/Home.aspx.

2. Locate the form and instructions for completion under the links on the left side. Under "Libraries," click on the "News & Documentation" link, and double click on the "Form to request a SAS National/Regional Custom DCT (National/Regional C DCT)."

3. Select "Open" in the pop-up window to download a copy of the form. Complete the form and follow the steps to submit the SAFE. The SAFE is routed to the AFS-900 Continual Improvement Program Office (CIPO) Technical Support Team (TST) for authoring. A representative from the TST will contact the SAFE submitter.

e) Random Inspection (RI) (Ramp). RIs are used to record planned or unplanned ramp inspections. With authorization, an RI can be assigned to an ASI or is available for use by an ASI anytime at their discretion. RIs support the geographic program using the Geographic Airport Data Display (GEO ADD) tool.

f) En Route Inspections. En Route inspections are used to record planned or unplanned cockpit/cabin En Route inspections. With authorization, the ASI may perform these inspections at any location and at any time. An En Route inspection can be planned in the CAP by the PI or initiated by an ASI.

11) 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.

Q. SAS Assistance, Feedback or Enhancement (SAFE) Process and Continuous Improvement. SAS uses a continuous feedback loop to improve SAS products. ASIs should submit their concerns or recommendations using the SAFE feature in SAS automation. For more information on the SAFE process, refer to the SAFE User Guide found on the SAFE SharePoint site, under "News and Documentation."

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Table 10-1-2B. Mapping of Program Elements to Master List of Functions (SAS Approved Numbering)

Title 14 CFR Part 121 (Peer Group A)

Organizational Management	Flight Operations	Operational Control	Aircraft Technical Operations	Onboard Operations	Ground and Station Operations
1.1 Safety Management (H) 1.1.2 (OP) Safety Program (Ground and Flight) 1.1.3 (AW) CASS 1.1.4 (AW) Reliability Program **1.2 Operations Management (L)** 1.2.1 (OP) Part 119 Required Personnel 1.2.2 (OP) Manual Management 1.2.3 (OP) Computer-Based Recordkeeping System **1.3 Airworthiness Management (L)** 1.3.1 (AW) Part 119 Required Personnel 1.3.2 (AW) Manual Management 1.3.3 (AW) CASE	**2.1 Training & Qualification (M)** 2.1.1 (OP) Training of Flight Crew Members 2.1.2 (OP) Training of Check Airmen and Instructors 2.1.3 (OP) Simulators / Training Devices 2.1.4 (OP) Outsource Crewmember Training 2.1.5 (OP) Appropriate Airmen / Crewmember Checks & Quals 2.1.6 (OP) Advanced Qualification Program (AQP) 2.1.7 (OP) Flight Crewmember Flight / Duty / Rest Time **2.2 Aircraft Operations (H)** 2.2.1 (OP) Airmen Duties / Flight Deck Procedures 2.2.2 (OP) Category II & III Ops 2.2.3 (OP) Pilot Operating Limitations / Recent Experience **2.3 Aircraft Equipment (M)** 2.3.1 (OP) Appropriate Operational Equipment	**3.1 Training & Qualification (M)** 3.1.1 (OP) Training and Qualifications of Dispatchers and Flight Followers 3.1.2 (OP) Dispatcher Duty / Rest Time **3.2 Flight Operations Engineering (M)** 3.2.1 (OP) Aircraft Performance Operating Limitations 3.2.2 (OP) Use of Approved Areas, Routes, and Airports 3.2.3 (OP) Special Navigation Areas of Operation 3.2.4 (OP) RVSM Authorization **3.3 Flight Planning and Monitoring (H)** 3.3.1 (OP) Operational Control 3.3.2 (OP) Dispatch / Flight Release 3.3.3 (OP) Flight / Load Manifest / Weight & Balance Control 3.3.4 (OP) MEL / CDL / NEF Procedures 3.3.5 (OP) Extended Operations (ETOPS)	**4.1 Training & Qualification (L)** 4.1.1 (AW) RII Personnel 4.1.2 (AW) Maintenance Certificate Requirements 4.1.3 (AW) Maintenance / RII Training Program **4.2 Maintenance Planning and Monitoring (H)** 4.2.1 (AW) Maintenance / Inspection Requirements 4.2.2 (AW) Maintenance / Inspection Schedule 4.2.3 (AW) AD Management 4.2.4 (AW) Recordkeeping 4.2.5 (AW) Maintenance Control **4.3 Maintenance Operations (H)** 4.3.1 (AW) Airworthiness Release / Maintenance Log Requirements 4.3.2 (AW) RII 4.3.3 (AW) MEL / CDL / NEF and Other Deferred Maintenance 4.3.4 (AW) Major Repairs & Alterations 4.3.5 (AW) ETOPS **4.4 Technical Administration (L)** 4.4.1 (AW) Special Flight Permits 4.4.2 (AW) MIS / SDR 4.4.3 (AW) Short-term Escalations 4.4.4 (AW) Aircraft Acceptance Process 4.4.5 (AW) Weight & Balance Program **4.5 Maintenance Facilities/Providers (M)** 4.5.1 (AW) Maintenance Facility / Main Maintenance Base 4.5.2 (AW) Maintenance Providers 4.5.3 (AW) Line Stations **4.6 Maintenance Special Requirements (M)** 4.6.1 (AW) Avionics Special Emphasis Programs 4.6.2 (AW) Maintenance Special Emphasis Programs **4.7 Maintenance Tools & Parts Control (M)** 4.7.1 (AW) Control of Calibrated Tools & Test Equipment 4.7.2 (AW) Aircraft Parts/Material Control	**5.1 Training & Qualification (M)** 5.1.1 (OP) Training of Flight Attendants 5.1.2 (OP) Flight Attendant Duty / Rest Time **5.2 Cabin Operations (M)** 5.2.1 (OP) Crewmember Duties / Cabin Procedures 5.2.2 (OP) Carry-on Baggage Program 5.2.3 (OP) Exit Seating Program 5.2.4 (OP) Passenger Handling	**6.1 Training & Qualification (M)** 6.1.1 (OP) Training of Station Personnel 6.1.2 (OP) Hazardous Material Training Program **6.2 Ground Handling (M)** 6.2.1 (AW) Fueling 6.2.2 (AW) Deicing Program 6.2.3 (OP) Deicing Program 6.2.4 (OP) Line Station Operations / Ground Personnel Duties **6.3 Cargo Acceptance & Handling (H)** 6.3.1 (OP) Carriage of Cargo 6.3.2 (OP) Hazardous Materials 6.3.3 (AW) Cargo Handling Equipment Systems & Appliances

Subsystem Criticality: High–(H), Medium–(M), Low–(L)

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Table 10-1-2B. Mapping of Program Elements to Master List of Functions (SAS Approved Numbering) (Continued)

Title 14 CFR Part 135 (10 or More) (Peer Group B)

Organizational Management	Flight Operations	Operational Control	Aircraft Technical Operations	Onboard Operations	Ground and Station Operations
1.1 Safety Management (H) 1.1.2 (OP) Safety Program (Ground and Flight) 1.1.3 (AW) CASS 1.1.4 (AW) Reliability Program **1.2 Operations Management (L)** 1.2.1 (OP) Part 119 Required Personnel 1.2.2 (OP) Manual Management 1.2.3 (OP) Computer-Based Recordkeeping System **1.3 Airworthiness Management (L)** 1.3.1 (AW) Part 119 Required Personnel 1.3.2 (AW) Manual Management 1.3.3 (AW) CASE	**2.1 Training & Qualification (M)** 2.1.1 (OP) Training of Flight Crew Members 2.1.2 (OP) Training of Check Airmen and Instructors 2.1.3 (OP) Simulators / Training Devices 2.1.4 (OP) Outsource Crewmember Training 2.1.5 (OP) Appropriate Airmen / Crewmember Checks & Quals 2.1.6 (OP) Advanced Qualification Program (AQP) 2.1.7 (OP) Flight Crewmember Flight / Duty / Rest Time **2.2 Aircraft Operations (H)** 2.2.1 (OP) Airmen Duties / Flight Deck Procedures 2.2.2 (OP) Category II & III Ops 2.2.3 (OP) Pilot Operating Limitations / Recent Experience **2.3 Aircraft Equipment (M)** 2.3.1 (OP) Appropriate Operational Equipment	**3.2 Flight Operations Engineering (M)** 3.2.1 (OP) Aircraft Performance Operating Limitations 3.2.2 (OP) Use of Approved Areas, Routes, and Airports 3.2.3 (OP) Special Navigation Areas of Operation 3.2.4 (OP) RVSM Authorization **3.3 Flight Planning and Monitoring (H)** 3.3.1 (OP) Operational Control 3.3.3 (OP) Flight / Load Manifest / Weight & Balance Control 3.3.4 (OP) MEL / CDL / NEF Procedures 3.3.5 (OP) Extended Operations (ETOPS)	**4.1 Training & Qualification (L)** 4.1.1 (AW) RII Personnel 4.1.2 (AW) Maintenance Certificate Requirements 4.1.3 (AW) Maintenance / RII Training Program **4.2 Maintenance Planning and Monitoring (H)** 4.2.1 (AW) Maintenance / Inspection Requirements 4.2.2 (AW) Maintenance / Inspection Schedule 4.2.3 (AW) AD Management 4.2.4 (AW) Recordkeeping 4.2.5 (AW) Maintenance Control **4.3 Maintenance Operations (H)** 4.3.1 (AW) Airworthiness Release / Maintenance Log Requirements 4.3.2 (AW) RII 4.3.3 (AW) MEL / CDL / NEF and Other Deferred Maintenance 4.3.4 (AW) Major Repairs & Alterations 4.3.5 (AW) ETOPS **4.4 Technical Administration (L)** 4.4.1 (AW) Special Flight Permits 4.4.2 (AW) MIS / SDR 4.4.3 (AW) Short-term Escalations 4.4.4 (AW) Aircraft Acceptance Process 4.4.5 (AW) Weight & Balance Program **4.5 Maintenance Facilities/Providers (M)** 4.5.1 (AW) Maintenance Facility / Main Maintenance Base 4.5.2 (AW) Maintenance Providers **4.6 Maintenance Special Requirements (M)** 4.6.1 (AW) Avionics Special Emphasis Programs 4.6.2 (AW) Maintenance Special Emphasis Programs **4.7 Maintenance Tools & Parts Control (M)** 4.7.1 (AW) Control of Calibrated Tools & Test Equipment 4.7.2 (AW) Aircraft Parts/Material Control	**5.1 Training & Qualification (M)** 5.1.1 (OP) Training of Flight Attendants 5.1.2 (OP) Flight Attendant Duty / Rest Time **5.2 Cabin Operations (M)** 5.2.1 (OP) Crewmember Duties / Cabin Procedures 5.2.2 (OP) Carry-on Baggage Program 5.2.3 (OP) Exit Seating Program 5.2.4 (OP) Passenger Handling	**6.1 Training & Qualification (M)** 6.1.1 (OP) Training of Station Personnel 6.1.2 (OP) Hazardous Material Training Program **6.2 Ground Handling (M)** 6.2.1 (AW) Fueling 6.2.2 (AW) Deicing Program 6.2.3 (OP) Deicing Program 6.2.4 (OP) Line Station Operations / Ground Personnel Duties **6.3 Cargo Acceptance & Handling (H)** 6.3.1 (OP) Carriage of Cargo 6.3.2 (OP) Hazardous Materials 6.3.3 (AW) Cargo Handling Equipment Systems & Appliances

Subsystem Criticality: High–(H), Medium–(M), Low–(L)

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Table 10-1-2B. Mapping of Program Elements to Master List of Functions (SAS Approved Numbering) (Continued)

Title 14 CFR Part 135 (9 or Less) (Peer Group C)

Organizational Management (L)	Flight Operations (M)	Operational Control (M)	Aircraft Technical Operations (M)	Onboard Operations (M)	Ground and Station Operations (M)
1.1 Safety Management 1.1.2 (OP) Safety Program (Ground and Flight) 1.1.3 (AW) CASS 1.1.4 (AW) Reliability Program **1.2 Operations Management** 1.2.1 (OP) Part 119 Required Personnel 1.2.2 (OP) Manual Management 1.2.3 (OP) Computer-Based Recordkeeping System **1.3 Airworthiness Management** 1.3.1 (AW) Part 119 Required Personnel 1.3.2 (AW) Manual Management	**2.1 Training & Qualification** 2.1.1 (OP) Training of Flight Crew Members 2.1.2 (OP) Training of Check Airmen and Instructors 2.1.3 (OP) Simulators / Training Devices 2.1.4 (OP) Outsource Crewmember Training 2.1.5 (OP) Appropriate Airmen / Crewmember Checks & Quals 2.1.6 (OP) Advanced Qualification Program (AQP) 2.1.7 (OP) Flight Crewmember Flight / Duty / Rest Time **2.2 Aircraft Operations** 2.2.1 (OP) Airmen Duties / Flight Deck Procedures 2.2.2 (OP) Category II & III Ops 2.2.3 (OP) Pilot Operating Limitations / Recent Experience **2.3 Aircraft Equipment** 2.3.1 (OP) Appropriate Operational Equipment	**3.2 Flight Operations Engineering** 3.2.1 (OP) Aircraft Performance Operating Limitations 3.2.2 (OP) Use of Approved Areas, Routes, and Airports 3.2.3 (OP) Special Navigation Areas of Operation 3.2.4 (OP) RVSM Authorization **3.3 Flight Planning and Monitoring** 3.3.1 (OP) Operational Control 3.3.3 (OP) Flight / Load Manifest / Weight & Balance Control 3.3.4 (OP) MEL / CDL / NEF Procedures 3.3.5 (OP) Extended Operations (ETOPS)	**4.1 Training & Qualification** 4.1.1 (AW) RII Personnel 4.1.2 (AW) Maintenance Certificate Requirements 4.1.3 (AW) Maintenance / RII Training Program **4.2 Maintenance Planning and Monitoring** 4.2.1 (AW) Maintenance / Inspection Requirements 4.2.2 (AW) Maintenance / Inspection Schedule 4.2.3 (AW) AD Management 4.2.4 (AW) Recordkeeping 4.2.5 (AW) Maintenance Control **4.3 Maintenance Operations** 4.3.1 (AW) Airworthiness Release / Maintenance Log Requirements 4.3.2 (AW) RII 4.3.3 (AW) MEL / CDL / NEF / and Other Deferred Maintenance 4.3.4 (AW) Major Repairs & Alterations 4.3.5 (AW) ETOPS **4.4 Technical Administration** 4.4.1 (AW) Special Flight Permits 4.4.2 (AW) MIS / SDR 4.4.3 (AW) Short-term Escalations 4.4.4 (AW) Aircraft Acceptance Process 4.4.5 (AW) Weight & Balance Program **4.5 Maintenance Facilities/Providers** 4.5.1 (AW) Maintenance Facility / Main Maintenance Base 4.5.2 (AW) Maintenance Providers **4.6 Maintenance Special Requirements** 4.6.1 (AW) Avionics Special Emphasis Programs 4.6.2 (AW) Maintenance Special Emphasis Programs **4.7 Maintenance Tools & Parts Control** 4.7.1 (AW) Control of Calibrated Tools & Test Equipment 4.7.2 (AW) Aircraft Parts/Material Control	**5.1 Training & Qualification** 5.1.1 (OP) Training of Flight Attendants 5.1.2 (OP) Flight Attendant Duty / Rest Time **5.2 Cabin Operations** 5.2.1 (OP) Crewmember Duties / Cabin Procedures 5.2.2 (OP) Carry-on Baggage Program 5.2.4 (OP) Passenger Handling	**6.1 Training & Qualification** 6.1.1 (OP) Training of Station Personnel 6.1.2 (OP) Hazardous Material Training Program **6.2 Ground Handling** 6.2.1 (AW) Fueling 6.2.2 (AW) Deicing Program 6.2.3 (OP) Deicing Program 6.2.4 (OP) Line Station Operations / Ground Personnel Duties **6.3 Cargo Acceptance & Handling** 6.3.1 (OP) Carriage of Cargo 6.3.2 (OP) Hazardous Materials 6.3.3 (AW) Cargo Handling Equipment Systems & Appliances

System Criticality: High–(H), Medium–(M), Low–(L)

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Table 10-1-2B. Mapping of Program Elements to Master List of Functions (SAS Approved Numbering) (Continued)

Title 14 CFR Part 135 (Single Pilot) (Peer Group D)

Organizational Management (L)	Flight Operations (M)	Operational Control (M)	Aircraft Technical Operations (M)	Onboard Operations (M)	Ground and Station Operations (M)
1.1 Safety Management 1.1.2 (OP) Safety Program (Ground and Flight) **1.2 Operations Management** 1.2.3 (OP) Computer-Based Recordkeeping System	**2.1 Training & Qualification** 2.1.5 (OP) Appropriate Airmen / Crewmember Checks & Quals 2.1.7 (OP) Flight Crewmember Flight / Duty / Rest Time **2.2 Aircraft Operations** 2.2.1 (OP) Airmen Duties / Flight Deck Procedures 2.2.3 (OP) Pilot Operating Limitations / Recent Experience **2.3 Aircraft Equipment** 2.3.1 (OP) Appropriate Operational Equipment	**3.2 Flight Operations Engineering** 3.2.1 (OP) Aircraft Performance Operating Limitations 3.2.2 (OP) Use of Approved Areas, Routes, and Airports 3.2.3 (OP) Special Navigation Areas of Operation 3.2.4 (OP) RVSM Authorization **3.3 Flight Planning and Monitoring** 3.3.1 (OP) Operational Control 3.3.3 (OP) Flight / Load Manifest / Weight & Balance Control 3.3.4 (OP) MEL / CDL / NEF Procedures	**4.1 Training & Qualification** 4.1.2 (AW) Maintenance Certificate Requirements **4.2 Maintenance Planning and Monitoring** 4.2.1 (AW) Maintenance / Inspection Requirements 4.2.2 (AW) Maintenance / Inspection Schedule 4.2.3 (AW) AD Management 4.2.4 (AW) Recordkeeping 4.2.5 (AW) Maintenance Control **4.3 Maintenance Operations** 4.3.1 (AW) Airworthiness Release / Maintenance Log Requirements 4.3.3 (AW) MEL / CDL / NEF and Other Deferred Maintenance 4.3.4 (AW) Major Repairs & Alterations **4.4 Technical Administration** 4.4.1 (AW) Special Flight Permits 4.4.2 (AW) MIS / SDR 4.4.4 (AW) Aircraft Acceptance Process 4.4.5 (AW) Weight & Balance Program **4.5 Maintenance Facilities/Providers** 4.5.1 (AW) Maintenance Facility / Main Maintenance Base 4.5.2 (AW) Maintenance Providers **4.6 Maintenance Special Requirements** 4.6.1 (AW) Avionics Special Emphasis Programs **4.7 Maintenance Tools & Parts Control** 4.7.1 (AW) Control of Calibrated Tools & Test Equipment 4.7.2 (AW) Aircraft Parts/Material Control	**5.2 Cabin Operations** 5.2.1 (OP) Crewmember Duties / Cabin Procedures 5.2.2 (OP) Carry-on Baggage Program 5.2.4 (OP) Passenger Handling	**6.1 Training & Qualification** 6.1.1 (OP) Training of Station Personnel 6.1.2 (OP) Hazardous Material Training Program **6.2 Ground Handling** 6.2.1 (AW) Fueling 6.2.2 (AW) Deicing Program 6.2.3 (OP) Deicing Program **6.3 Cargo Acceptance & Handling** 6.3.1 (OP) Carriage of Cargo 6.3.2 (OP) Hazardous Materials 6.3.3 (AW) Cargo Handling Equipment Systems & Appliances

System Criticality: High–(H), Medium–(M), Low–(L)

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Table 10-1-2B. Mapping of Program Elements to Master List of Functions (SAS Approved Numbering) (Continued)

Title 14 CFR Part 135 Helicopter Air Ambulance (HAA) (Peer Group E)

Organizational Management	Flight Operations	Operational Control	Aircraft Technical Operations	Onboard Operations	Ground and Station Operations
1.1 Safety Management (H) 1.1.2 (OP) Safety Program (Ground and Flight) 1.1.3 (AW) CASS **1.2 Operations Management (L)** 1.2.1 (OP) Part 119 Required Personnel 1.2.2 (OP) Manual Management 1.2.3 (OP) Computer-Based Recordkeeping System **1.3 Airworthiness Management (L)** 1.3.1 (AW) Part 119 Required Personnel 1.3.2 (AW) Manual Management	**2.1 Training & Qualification (M)** 2.1.1 (OP) Training of Flight Crew Members 2.1.2 (OP) Training of Check Airmen and Instructors 2.1.3 (OP) Simulators / Training Devices 2.1.4 (OP) Outsource Crewmember Training 2.1.5 (OP) Appropriate Airmen / Crewmember Checks & Quals 2.1.6 (OP) Advanced Qualification Program (AQP) 2.1.7 (OP) Flight Crewmember Flight / Duty / Rest Time **2.2 Aircraft Operations (H)** 2.2.1 (OP) Airmen Duties / Flight Deck Procedures 2.2.3 (OP) Pilot Operating Limitations / Recent Experience **2.3 Aircraft Equipment (M)** 2.3.1 (OP) Appropriate Operational Equipment	**3.2 Flight Operations Engineering (M)** 3.2.1 (OP) Aircraft Performance Operating Limitations 3.2.2 (OP) Use of Approved Areas, Routes, and Airports 3.2.3 (OP) Special Navigation Areas of Operation **3.3 Flight Planning and Monitoring (H)** 3.3.1 (OP) Operational Control 3.3.3 (OP) Flight / Load Manifest / Weight & Balance Control 3.3.4 (OP) MEL / CDL / NEF Procedures	**4.1 Training & Qualification (L)** 4.1.1 (AW) RII Personnel 4.1.2 (AW) Maintenance Certificate Requirements 4.1.3 (AW) Maintenance / RII Training Program **4.2 Maintenance Planning and Monitoring (H)** 4.2.1 (AW) Maintenance / Inspection Requirements 4.2.2 (AW) Maintenance / Inspection Schedule 4.2.3 (AW) AD Management 4.2.4 (AW) Recordkeeping 4.2.5 (AW) Maintenance Control **4.3 Maintenance Operations (H)** 4.3.1 (AW) Airworthiness Release / Maintenance Log Requirements 4.3.2 (AW) RII 4.3.3 (AW) MEL / CDL / NEF and Other Deferred Maintenance 4.3.4 (AW) Major Repairs & Alterations **4.4 Technical Administration (L)** 4.4.1 (AW) Special Flight Permits 4.4.2 (AW) MIS / SDR 4.4.3 (AW) Short-term Escalations 4.4.4 (AW) Aircraft Acceptance Process 4.4.5 (AW) Weight & Balance Program **4.5 Maintenance Facilities/Providers (M)** 4.5.1 (AW) Maintenance Facility / Main Maintenance Base 4.5.2 (AW) Maintenance Providers **4.6 Maintenance Special Requirements (M)** 4.6.1 (AW) Avionics Special Emphasis Programs **4.7 Maintenance Tools & Parts Control (M)** 4.7.1 (AW) Control of Calibrated Tools & Test Equipment 4.7.2 (AW) Aircraft Parts/Material Control	**5.2 Cabin Operations (M)** 5.2.1 (OP) Crewmember Duties / Cabin Procedures	**6.1 Training & Qualification (M)** 6.1.1 (OP) Training of Station Personnel 6.1.2 (OP) Hazardous Material Training Program **6.2 Ground Handling (M)** 6.2.1 (AW) Fueling 6.2.2 (AW) Deicing Program 6.2.3 (OP) Deicing Program **6.3 Cargo Acceptance & Handling (H)** 6.3.1 (OP) Carriage of Cargo 6.3.2 (OP) Hazardous Materials

Subsystem Criticality: High–(H), Medium–(M), Low–(L)

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Table 10-1-2B. Mapping of Program Elements to Master List of Functions (SAS Approved Numbering) (Continued)

Title 14 CFR Part 145 Repair Stations Within the United States (Peer Group F)

Organizational Management (L)	Flight Operations	Operational Control	Aircraft Technical Operations (M)	Onboard Operations	Ground and Station Operations
1.4 Repair Station Management 1.4.1 Personnel Records 1.4.2 Certificate Requirements 1.4.3 Manuals 1.4.4 Quality Control System			**4.1 Training & Qualification** 4.1.4 Training and Qualifications **4.2 Maintenance Planning and Monitoring** 4.2.6 Technical Data 4.2.7 Air Carrier and Air Operator Requirements 4.2.8 Domestic European Aviation Safety Agency (EASA) **4.3 Maintenance Operations** 4.3.6 Maintenance Process 4.3.7 Work Away from Station **4.4 Technical Administration** 4.4.6 Record Systems **4.5 Maintenance Facilities/Providers** 4.5.4 Housing and Facilities 4.5.5 Contract Work – Certificated 4.5.6 Contract Work - Noncertificated **4.7 Maintenance Tools & Parts Control** 4.7.3 Tools and Equipment 4.7.4 Parts and Materials		

System Criticality: High–(H), Medium–(M), Low–(L)

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Table 10-1-2B. Mapping of Program Elements to Master List of Functions (SAS Approved Numbering) (Continued)

Title 14 CFR Part 145 Repair Stations Outside the United States without an Aviation Safety Agreement (Peer Group G)

Title 14 CFR Part 145 Outside United States with Aviation Safety Agreement (Peer Group H)

Organizational Management (L)	Flight Operations	Operational Control	Aircraft Technical Operations (M)	Onboard Operations	Ground and Station Operations
1.4 Repair Station Management 1.4.1 Personnel Records 1.4.2 Certificate Requirements 1.4.3 Manuals 1.4.4 Quality Control System			**4.1 Training & Qualification** 4.1.4 Training and Qualifications **4.2 Maintenance Planning and Monitoring** 4.2.6 Technical Data 4.2.7 Air Carrier and Air Operator Requirements **4.3 Maintenance Operations** 4.3.6 Maintenance Process 4.3.7 Work Away from Station **4.4 Technical Administration** 4.4.6 Record Systems **4.5 Maintenance Facilities/Providers** 4.5.4 Housing and Facilities 4.5.5 Contract Work – Certificated 4.5.6 Contract Work - Noncertificated **4.7 Maintenance Tools & Parts Control** 4.7.3 Tools and Equipment 4.7.4 Parts and Materials		

System Criticality: High–(H), Medium–(M), Low–(L)

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Table 10-1-2B. Mapping of Program Elements to Master List of Functions (SAS Approved Numbering) (Continued)

All Peer Groups

Organizational Management	Flight Operations	Operational Control	Aircraft Technical Operations	Onboard Operations	Ground and Station Operations
1.1 Safety Management 1.1.2 (OP) Safety Program (Ground and Flight) 1.1.3 (AW) CASS 1.1.4 (AW) Reliability Program **1.2 Operations Management** 1.2.1 (OP) Part 119 Required Personnel 1.2.2 (OP) Manual Management 1.2.3 (OP) Computer-Based Recordkeeping System **1.3 Airworthiness Management** 1.3.1 (AW) Part 119 Required Personnel 1.3.2 (AW) Manual Management 1.3.3 (AW) CASE **1.4 Repair Station Management** 1.4.1 (AW) Personnel Records 1.4.2 (AW) Certificate Requirements 1.4.3 (AW) Manuals 1.4.4 (AW) Quality Control System	**2.1 Training & Qualification** 2.1.1 (OP) Training of Flight Crew Members 2.1.2 (OP) Training of Check Airmen and Instructors 2.1.3 (OP) Simulators / Training Devices 2.1.4 (OP) Outsource Crewmember Training 2.1.5 (OP) Appropriate Airmen / Crewmember Checks & Quals 2.1.6 (OP) Advanced Qualification Program (AQP) 2.1.7 (OP) Flight Crewmember Flight / Duty / Rest Time **2.2 Aircraft Operations** 2.2.1 (OP) Airmen Duties / Flight Deck Procedures 2.2.2 (OP) Category II & III Ops 2.2.3 (OP) Pilot Operating Limitations / Recent Experience **2.3 Aircraft Equipment** 2.3.1 (OP) Appropriate Operational Equipment	**3.1 Training & Qualification** 3.1.1 (OP) Training and Qualifications of Dispatchers and Flight Followers 3.1.2 (OP) Dispatcher Duty / Rest Time **3.2 Flight Operations Engineering** 3.2.1 (OP) Aircraft Performance Operating Limitations 3.2.2 (OP) Use of Approved Areas, Routes, and Airports 3.2.3 (OP) Special Navigation Areas of Operation 3.2.4 (OP) RVSM Authorization **3.3 Flight Planning and Monitoring** 3.3.1 (OP) Operational Control 3.3.2 (OP) Dispatch / Flight Release 3.3.3 (OP) Flight / Load Manifest / Weight & Balance Control 3.3.4 (OP) MEL / CDL / NEF Procedures 3.3.5 (OP) Extended Operations (ETOPS)	**4.1 Training & Qualification** 4.1.1 (AW) RII Personnel 4.1.2 (AW) Maintenance Certificate Requirements 4.1.3 (AW) Maintenance / RII Training Program 4.1.4 (AW) Training and Qualifications **4.2 Maintenance Planning and Monitoring** 4.2.1 (AW) Maintenance / Inspection Requirements 4.2.2 (AW) Maintenance / Inspection Schedule 4.2.3 (AW) AD Management 4.2.4 (AW) Recordkeeping 4.2.5 (AW) Maintenance Control 4.2.6 (AW) Technical Data 4.2.7 (AW) Air Carrier and Air Operator Requirements 4.2.8 (AW) Domestic European Aviation Safety Agency (EASA) **4.3 Maintenance Operations** 4.3.1 (AW) Airworthiness Release / Maintenance Log Requirements 4.3.2 (AW) RII 4.3.3 (AW) MEL / CDL / NEF and Other Deferred Maintenance 4.3.4 (AW) Major Repairs & Alterations 4.3.5 (AW) ETOPS 4.3.6 (AW) Maintenance Process 4.3.7 (AW) Work Away from Station **4.4 Technical Administration** 4.4.1 (AW) Special Flight Permits 4.4.2 (AW) MIS / SDR 4.4.3 (AW) Short-term Escalations 4.4.4 (AW) Aircraft Acceptance Process 4.4.5 (AW) Weight & Balance Program 4.4.6 (AW) Record Systems **4.5 Maintenance Facilities/Providers** 4.5.1 (AW) Maintenance Facility / Main Maintenance Base 4.5.2 (AW) Maintenance Providers 4.5.3 (AW) Line Stations 4.5.4 (AW) Housing and Facilities 4.5.5 (AW) Contract Work – Certificated 4.5.6 (AW) Contract Work – Noncertificated **4.6 Maintenance Special Requirements** 4.6.1 (AW) Avionics Special Emphasis Programs 4.6.2 (AW) Maintenance Special Emphasis Programs **4.7 Maintenance Tools & Parts Control** 4.7.1 (AW) Control of Calibrated Tools & Test Equipment 4.7.2 (AW) Aircraft Parts/Material Control 4.7.3 (AW) Tools and Equipment 4.7.4 (AW) Parts and Materials	**5.1 Training & Qualification** 5.1.1 (OP) Training of Flight Attendants 5.1.2 (OP) Flight Attendant Duty / Rest Time **5.2 Cabin Operations** 5.2.1 (OP) Crewmember Duties / Cabin Procedures 5.2.2 (OP) Carry-on Baggage Program 5.2.3 (OP) Exit Seating Program 5.2.4 (OP) Passenger Handling	**6.1 Training & Qualification** 6.1.1 (OP) Training of Station Personnel 6.1.2 (OP) Hazardous Material Training Program **6.2 Ground Handling** 6.2.1 (AW) Fueling 6.2.2 (AW) Deicing Program 6.2.3 (OP) Deicing Program 6.2.4 (OP) Line Station Operations / Ground Personnel Duties **6.3 Cargo Acceptance & Handling** 6.3.1 (OP) Carriage of Cargo 6.3.2 (OP) Hazardous Materials 6.3.3 (AW) Cargo Handling Equipment Systems & Appliances

10-1-2-7 through 10-1-2-29 RESERVED.

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VOLUME 10 SAFETY ASSURANCE SYSTEM POLICY AND PROCEDURES

CHAPTER 1 GENERAL

Section 3 Safety Assurance System: Roles and Responsibilities

10-1-3-1 GENERAL.

A. Purpose. The purpose of this section is to provide an overview of a Safety Assurance System (SAS) user's roles, responsibilities, and qualifications. This overview is not an all-inclusive list, but provides a summary of tasks or functions related to SAS.

B. Scope. This section applies to all SAS users.

10-1-3-3 RESERVED.

10-1-3-5 BACKGROUND. All users of SAS must use and maintain the system in accordance with the policies and procedures defined in this section.

A. The Director of Flight Standards Service (AFS-1).

1) Provides the national policy and procedures for SAS.

2) Provides national policy and procedures for baseline training and staffing standards.

3) Provides adequate regional resources to support SAS processes.

B. Flight Standards National Field Office (FSNFO) (AFS-900).

1) Designs, develops, and deploys national systems for certification, surveillance, and resolution of safety issues for air operators and air agencies.

2) Provides the policy and guidance on Flight Standards Service (AFS) internal and external Safety Management System (SMS) requirements and interfaces.

3) Provides National Safety Analysis (NSA) and program support for the SAS process.

4) Collects feedback through the SAS Assistance, Feedback, or Enhancement (SAFE) process, completes changes and updates for all SAS processes, and assesses SAS process effectiveness.

5) Continually improves the SAS process using Quality Management System (QMS) work instructions.

6) Provides field support to end users.

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7) Provides subject matter experts (SME) to support SAS.

8) Selects a National SAS Administrator (AFS-900).

C. Air Transportation Division (AFS-200), Aircraft Maintenance Division (AFS-300), and Flight Technologies and Procedures Division (AFS-400).

1) Participate as stakeholders in the development and continuous improvement of SAS.

2) Work with AFS-900 to ensure SAS Data Collection Tools (DCT) align with national policy.

D. Flight Standards Training Division (AFS-500). Budgets for and provides the training that meets the needs of SAS users.

E. Flight Standards Quality Assurance Division (AFS-40).

1) Reports directly to AFS-1.

2) Audits compliance with SAS policy and procedures and evaluates the effectiveness of SAS processes.

F. Regional Coordinators/Regional Flight Standards Division (RFSD) Offices.

1) Complete the baseline training requirements.

2) Use allocated resources (e.g., funding and trained personnel) in accordance with AFS priorities.

3) Resolve issues that the certificate-holding district office (CHDO) has identified.

4) Support geographic resource requests.

5) Concur with plan when required.

6) May be designated as a data quality reviewer (DQR).

G. Assigned SAS Administrator and Security Auditor. The SAS Administrator is an appointed position throughout AFS at the national (AFS-900), regional, and office levels. The SAS Administrator provides SAS users authorized access and user roles based on their job function. The SAS Administrator is responsible for deactivating internal users and deleting accounts of external users who no longer require access to SAS.

1) To move a user from one office to another, you must accomplish the following steps in this order:

a) You will need to ensure the user's new office location is updated in the Enhanced Flight Standards Automation System (eFSAS) before you update the information in

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SAS automation. (Refer to the eFSAS User Manual for information on how to update inspector data.)

b) In SAS, select "User Administration" and locate the user's previous office. Select the user's name and add the new office code from the drop-down menu. You will also be required to add the Office Manager (OM) and the Frontline Manager (FLM). Once you update the information in SAS, the information will automatically update in eFSAS. (Refer to the SAS Automation User Guide (AUG) for information on "User Administration" functions.)

2) As the Office-Level SAS Administrator and Security Auditor, you will:

a) Be delegated by the OM.

b) Receive SAS Administrator training.

c) Manage all user accounts at the office level.

d) Create user accounts in the external portal system.

e) Review quarterly reports.

f) Receive emails when Federal Aviation Administration (FAA) security detects any suspicious activity.

g) Contact the Information Technology (IT) Program Manager or National Service Desk of suspicious activity and then follow the steps in the AUG.

3) As the Regional-Level SAS Administrator and Security Auditor, you will:

a) Receive SAS Administrator training.

b) Manage all user accounts at the regional level.

c) Review quarterly reports.

d) Receive emails when FAA security detects any suspicious activity.

e) Contact the IT Program Manager or National Service Desk of suspicious activity and then follow the steps in the AUG.

4) As the National SAS Administrator and Security Auditor, you will:

a) Receive SAS Administrator training.

b) Manage all user accounts at the national level.

c) Review quarterly reports.

d) Receive emails when FAA security detects any suspicious activity.

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e) Contact the IT Program Manager or National Service Desk of suspicious activity and then follow the steps in the AUG.

H. Office Point of Contact (POC). The SAS Office POC is an appointed position throughout AFS at the office level. External user requests are directed to the SAS POC. The Office POC can approve the request that will add the user to SAS. SAS POCs need to coordinate with certificate holders' or applicants' principal inspectors (PI) to verify external user requests for access to SAS automation prior to authorizing external users.

I. Office Manager (OM).

1) Ensures office personnel have proper training and full knowledge of their role in SAS.

2) Ensures office personnel effectively execute their assigned SAS responsibilities in accordance with established SAS processes and procedures.

3) Supports SAS transition goals.

4) Manages the certification projects and certificates for the office's assigned certificate holder(s).

5) Supports the geographic program requests.

6) Determines and requests staffing, and requests baseline training to support SAS processes. Receives input from the PI and identifies other training needs for office personnel.

7) Participates in the annual planning review, monitors and tracks the progress of the development of the Comprehensive Assessment Plan (CAP), and concurs with the plan.

8) Ensures that personnel under their supervision participate in the initial or annual planning process.

9) Ensures the CAP is planned and assigned in resource order unless a justification is provided to support not assigning in resource order.

10) Ensures that the certification project manager (CPM) or PI uses the tools and procedures found in this order.

11) Obtains and provides resources to support the work plan to include travel funding.

12) Concurs with the plan.

13) Concurs with outgoing geographic requests.

14) Assigns an OM, FLM, or other individuals as needed as proxies to perform duties when needed. Such assignments shall be effected in accordance with any applicable law, the

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FAA Personnel Management System, Human Resource Policy Manual (HRPM) EMP-1.15, temporary internal assignments, and labor agreements.

15) Selects an Office-Level SAS Administrator and Security Auditor.

J. Frontline Manager (FLM).

1) Assigns aviation safety inspector (ASI) resources based on resource order first.

2) Provides leadership, support, and resources to ensure that personnel are properly trained and have met the SAS baseline training requirements.

3) Ensures that personnel complete assigned tasks effectively in accordance with established SAS processes and procedures.

4) Concurs with the work plan for Title 14 of the Code of Federal Regulations (14 CFR) parts 135 and 145.

5) Assigns work plans.

6) Assigns incoming geographic program requests.

7) Concurs with outgoing geographic program requests.

8) Ensures personnel conduct assigned work plans according to the specific inspection instructions.

9) Provides necessary leadership to resolve differences of opinion between reporting ASIs and Data Quality Reviewers (DQR).

10) Ensures the office roster is maintained.

11) Ensures the SAS make, model, and series (M/M/S) tables are maintained.

12) Approves random inspections (RI) and En Routes.

13) Performs data review, as required.

14) Assigns an OM, FLM, PI, or other individuals as needed as proxies to perform duties when needed. Such assignments shall be effected in accordance with any applicable law, the FAA Personnel Management System, HRPM EMP-1.15, temporary internal assignments, and labor agreements.

K. Certification Project Managers (CPM) or Principal Inspectors (PI). The CPM is responsible for the initial certification process, and the PI is responsible for the certificate management process.

1) Both the CPM and PI may perform the following functions:

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a) Review a certificate holder's or applicant's request for new or changed scope of operation and, if accepted, adjust the Certificate Holder's Operating Profile (CHOP), as required. The adjusted CHOP will produce the scoped DCTs needed to cover the change. The PI/CPM is required to enter data into Module 1 if the external portal is not used.

b) Collect and organize information to complete an applicant or certificate holder assessment, solicit input from team members, and make decisions about oversight requirements.

c) Update the configuration data in Module 1.

d) Prioritize SAS System or Subsystem Performance Assessments (SPA) by following SAS planning procedures.

e) Determine retargeting of oversight activities based on analysis of data or significant changes in the operating environment. Significant changes include, but are not limited to, financial distress, labor unrest, or changes in the scope and scale of operations/ratings (e.g., growth or downsizing) that may affect the certificate holder's or applicant's ability to balance resources, size, and organizational structure with operational requirements. Other examples are accidents, incidents, or occurrences that could affect a certificate holder and result in a change to oversight activities.

f) Participate in periodic meetings with the applicant or certificate holder to stay informed on financial health and growth plans, or other conditions that might cause an imbalance between resources and operations.

g) Provide specific instructions, as needed, for completing inspections using the planning procedures.

h) Bring aviation safety concerns to the Operations Research Analyst (ORA). Communicate analytical needs frequently to the ORA. Include the ORA in discussions or meetings of safety-related issues.

i) Determine if the applicant's or certificate holder's program and processes meet the standards for acceptance or approval.

j) Determine the appropriate action for the results of SPAs, Element Performance Assessments (EPA), Element Design Assessments (EDA), Essential Maintenance Providers (EMP), and Custom Data Collection Tools (C DCT) through Analysis, Assessment, and Action (AAA).

k) Plan geographic program requests.

l) Recommend resources.

m) Evaluate data in the AAA and determine if there is sufficient data to make an assessment.

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n) After coordination with the FLM, the PI or CPM may select a PI, an assistant PI, or an ASI as a proxy in the automation. The proxy would then be able to perform the same functions as the PI or CPM does in various places of the automation. Such assignments shall be effected in accordance with any applicable law, the FAA Personnel Management System, HRPM EMP-1.15, temporary internal assignments, and labor agreements.

2) The CPM or PI may perform the following functions, as appropriate:

a) The CPM ensures all certification job functions are complete. The CPM communicates project status to the Certification Project Team (CPT) and the CHDO manager.

b) The PI is responsible for identifying new hazards.

c) PIs may meet at least annually with their FLM and ORA to determine analytical needs. Discussion topics for this meeting include type of reports, frequency, and timing of ORA products.

d) PIs use the analysis and assessment process to make informed decisions about the certificate holder's or applicant's operating systems (1) before approving or accepting them when required to do so by regulations, and (2) during recurring Performance Assessments (PA). They take appropriate actions based on their analysis and assessment, and monitor progress using the Action Item Tracking Tool (AITT).

e) The PI ensures certificate holder regulatory compliance and system adequacy through recurring assessments.

L. Operations Research Analyst (ORA).

1) Serves as the focal point for analytical support.

a) Analyzes and summarizes safety data collected to support the planning and assessment modules.

b) Integrates information from a variety of internal and external data sources for developing long-term safety trends relevant to the office personnel.

c) Applies various analytical techniques to assist in clarifying safety issues.

2) Understands system safety and risk management (RM) concepts.

a) Possesses broad knowledge of system safety and the role of certification, surveillance, compliance, and enforcement functions.

b) Understands the key components of RM to assist in evaluating effectiveness.

3) Is familiar with automation tools and software applications.

a) Is skilled at data retrieval techniques to gather safety data.

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b) Is familiar with data reporting approaches for presenting analytical results.

c) Navigates the SAS automation and understands its various components.

4) Participates in meetings and discussions, and maintains an open dialogue with office members to meet analytical needs.

M. Data Quality Reviewer (DQR).

1) Continually monitors the status of reports and records in the automation, and reviews them in accordance with the data quality guidelines (DQG).

2) Promptly initiates actions necessary to resolve data quality issues or discrepancies.

N. Aviation Safety Inspector (ASI) Listed on the SAS Office Roster.

1) Participates in the planning activities to develop the CAP.

2) Schedules, coordinates, and accomplishes the work assignments using SAS tools. ASIs may work individually or as part of a team when conducting a DCT.

3) Accurately and promptly enters data collection results into the automation in accordance with DQGs.

4) Submits reports using the Dynamic Observation Report (DOR) when observations are relevant to safety, but are unplanned or outside of the planned surveillance. These observations are incidental to other work assignments.

5) Reevaluates returned inspection records and decides on the appropriate action (e.g., editing the record, conducting additional observations, or taking no action).

6) Promptly identifies unsafe conditions or possible regulatory violations observed during data collection, notifies the appropriate personnel, and makes appropriate entries into data systems (e.g., Program Tracking and Reporting Subsystem (PTRS) or SAS automation).

7) Follows established procedures to assist PIs in determining that the applicant or certificate holder complies with its written procedures and meets its established performance measures.

8) Performs reviews of data that fall within scope of expertise.

9) Supports PIs and performs tasks associated with the risk management process (RMP) and/or identifying new hazards, as assigned.

10) Conducts geographic inspections.

11) Conducts RIs and ad hoc En Routes, as approved.

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O. Team Coordinator (TC). The TC organizes and coordinates the team activities and determines how to distribute the questions among the team members. The TC ensures team members accurately answer the questions and completes the DCT on time.

P. Geographic Resource.

1) Submits reports using the DOR when observations are relevant to safety, but are unplanned or outside of the planned surveillance. These observations are incidental to other work assignments.

2) Completes geographic assigned tasks and enters data collection results accurately and promptly into the automation in accordance with DQGs.

3) Reevaluates returned inspection records and decides on the appropriate action (e.g., editing the record, conducting additional observations, or taking no action).

4) Promptly identifies unsafe conditions or possible regulatory violations observed during data collection. Notifies appropriate personnel and makes appropriate entries into FAA data systems.

5) Conducts data collection, as assigned.

Q. Aviation Safety Technicians (AST) and Aviation Safety Assistants (ASA).

1) ASTs and ASAs who enter assessment data on behalf of the ASI need to ensure they enter the data completely and accurately into the SAS automation.

2) ASTs can provide technical support to an ASI when there is research and documentation involved with the data collection process (e.g., DCTs, input into the Certificate Holder Assessment Tool (CHAT), RMPs, AITT) when assigned by their FLM. However, like ASIs, the ASTs must have the appropriate training.

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Figure 10-1-3A. SAS Training Requirements

The following table displays the training requirements for SAS users.

Course Name and Course Number	Course Length/ Delivery Method	Audience	Course Description/ Applicability
Introduction to SAS (27100190)	2 hours; Web-based Training (WBT)	Flight Standards Service (AFS) Employees	High-level introductory overview of SAS.
SAS User (27100223)	2-3 hours; WBT	Office and other personnel assigned the responsibility for SAS user administration	Topics include how to assign SAS user roles, extended functions, and proxy assignments.
Data Collection Tool Fundamentals for SAS (27100214)	2-3 hours; WBT course and briefing	Aviation safety inspectors (ASI) and aviation safety technicians (AST)	WBT course to provide detailed knowledge of Data Collection Tool (DCT) concepts, policy, foundational topics, and key automation screens. Prerequisite to the SAS for ASIs and Field Office Management (FOM) course.
SAS for Inspectors and Field Office Management (FOM) (21000102)	5 days; Instructor-Led Training (ILT)	-Field Office Managers (Flight Standards District Office (FSDO)/Certificate Management Office (CMO) Managers) -FOM (e.g., Assistant Manager, Frontline Manager (FLM)) -Supervisory principal inspectors (PI) -PIs -Assistant PIs -ASIs -Data Quality Reviewers (DQR) -ASTs	ILT course to be taught primarily in the field; covers SAS concepts, business process, policy, and automation, including hands-on student exercises in a SAS automation training site.

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Figure 10-1-3A. SAS Training Requirements (Continued)

Course Name and Course Number	Course Length/ Delivery Method	Audience	Course Description/ Applicability
SAS for Managers (21000101)	2 days; ILT	-AFS Headquarters (HQ) Managers (Division, Deputies, and Branch) -AFS Regional Managers (Deputies and Branch) -CMO/FSDO Managers	ILT course designed for managers; includes some automation content.
SAS for Operations Research Analysts (ORA) (21000100)	3 days; ILT	ORAs and AFS-900 Analysis and Information Program Office (AIPO) staff	ILT course designed for ORAs and other select analyst positions that require back-end access to the SAS database in order to perform their primary job function. This course will focus on SAS foundational concepts, business processes, automation (front-end), and database structure (back-end).
SAS for Staff (27100191)	2-3 hours; WBT	HQ, Regional, FO, Aircraft Evaluation Group (AEG), aviation safety assistants (ASA), and other employees	WBT course to provide training to other employees not covered in other courses.
SAS for Repair Stations Located Outside the United States (27100206)	1-2 hours; WBT course and briefing	ASIs that have oversight responsibility for repair stations located outside of the United States	Follow-on course (Decision Tree) to SAS for inspectors and Field Office Management (FOM).
SAS External Portal for Certificate Holders and Applicants (27100206)	1-2 hours; WBT or briefing	Certificate holders and applicants who are using the external portal	WBT course to provide an overview on the use of the external portal.
Introduction to the SAS External Portal for AFS (27100215)	Approx. 3 hours; WBT course and briefing	ASIs responsible for initial certification	WBT course to provide an overview on the use of the external portal.

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Figure 10-1-3A. SAS Training Requirements (Continued)

Course Name and Course Number	Course Length/ Delivery Method	Audience	Course Description/ Applicability
SAS Analysis, Assessment, and Action (AAA) (27100216)	1-2 hours; WBT course and briefing	PIs	Refresher training on the use of the AAA.
Risk Management Process (RMP) in SAS (27100224)	1-2 hours; WBT course and briefing	PIs	Introduction to RMP, new hazard, and System Analysis Team (SAT) processes.

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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

Acronym/Abbreviation	Description
AAA	Analysis, Assessment, and Action
AC	Advisory Circular
ACCD	Aircraft Configuration Control Document
ADG	Office of Hazardous Materials Safety
AFS	Flight Standards Service
AIPO	Analysis and Information Program Office
AITT	Action Item Tracking Tool
AQP	Advanced Qualification Program
ASA	Aviation Safety Assistant
ASAP	Aviation Safety Action Program
ASI	Aviation Safety Inspector
ASI-AD	Aviation Safety Inspector–Aircraft Dispatcher
ASI-CS	Aviation Safety Inspector–Cabin Safety
AST	Aviation Safety Technician
ATS	Air Transportation Supervisor
AUG	Automation User Guide
AW	Airworthiness (Avionics/Maintenance)
CAP	Comprehensive Assessment Plan
CASS	Continuing Analysis and Surveillance System
C DCT	Custom Data Collection Tool
CFR	Code of Federal Regulations

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Acronym/Abbreviation	Description
CHAT	Certificate Holder Assessment Tool
CHDO	Certificate-Holding District Office
CHEP	Certificate Holder Evaluation Process
CHOP	Certificate Holder Operating Profile
CIPO	Continual Improvement Program Office
COS	Continual Operational Safety
CPD	Certification Process Document
CPM	Certification Project Manager
CPT	Certification Project Team
CSOP	Certification Service Oversight Process
CTL	Certification Team Leader
DA	Design Assessment
DCT	Data Collection Tool
DEPM	Data Evaluation Program Manager
DOR	Dynamic Observation Report
DQG	Data Quality Guidelines
DQR	Data Quality Reviewer
EASA	European Aviation Safety Agency
EDA	Element Design Assessment
ED DCT	Element Design Data Collection Tool
EFIS	Electronic Flight Information System
EMP	Essential Maintenance Provider
EPA	Element Performance Assessment
EP DCT	Element Performance Data Collection Tool
ETOPS	Extended Operations
eVID	Enhanced Vital Information Database
FAA	Federal Aviation Administration
FLM	Frontline Manager
FO	Field Office
FOIA	Freedom of Information Act
FOQA	Flight Operations Quality Assurance
FSDO	Flight Standards District Office

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Acronym/Abbreviation	Description
FSNFO	Flight Standards National Field Office
GEO ADD	Geographic Airport Data Display
HAA	Helicopter Air Ambulance
Hazmat	Hazardous Materials
HMDM	Hazardous Materials Division Manager
HM FLM	Hazardous Materials Frontline Manager
HMFO	Hazardous Materials Field Office
HMSP	Hazardous Materials Safety Program
HSI	Hazardous Materials Safety Inspector
ICAO	International Civil Aviation Organization
IEP	Internal Evaluation Program
ILT	Instructor-Led Training
IWP	Individual Work Plan
LOPA	List of Passenger Accommodations
MCPD	Major Change Process Document
MIP	Maintenance Implementation Procedures
MLF	Master List of Functions
NIIM	National Inspection and Investigations Manual
NSA	National Safety Analysis
OM	Office Manager
OpSpecs	Operations Specifications
ORA	Operations Research Analyst
PA	Performance Assessment
PHI	Principal Hazardous Materials Inspector
PI	Principal Inspector
POC	Point of Contact
PTRS	Program Tracking and Reporting Subsystem
RC	Regional Coordinator
RDL	Required Document List
RFSD	Regional Flight Standards Division
RI	Random Inspection
RM	Risk Management

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Acronym/Abbreviation	Description
RMP	Risk Management Process
RTR	Returns the Request
RWL	Resource Work List
SAFE	SAS Assistance, Feedback, or Enhancement
SAS	Safety Assurance System
SASO	System Approach for Safety Oversight
SAT	System Analysis Team
SDR	Service Difficulty Report
SME	Subject Matter Expert
SMS	Safety Management System
SPA	System or Subsystem Performance Assessment
SPAS	Safety Performance Analysis System
SP DCT	System/Subsystem Performance Data Collection Tool
SRM	Safety Risk Management
SRR	Specific Regulatory Requirement
TC	Team Coordinator (EDA only)
TL	Team Leader
U.S.C.	United States Code
VDRP	Voluntary Disclosure Reporting Program
WBT	Web-based Training

Table 10-1-4B. Terms and Definitions

Term	Definition
Acceptable Risk	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.
Action Item Tracking Tool (AITT)	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.

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Term	Definition
Aircraft Technical Operations	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.
Applicant	An individual, group, or organization seeking new operating authority.
Assessment (in relation to Performance Assessment (PA) or Design Assessment (DA))	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.
Authoring Tool	The authoring tool is an application used by AFS-900 to sustain and continuously improve Data Collection Tools (DCT).
Authority Attribute	A clearly identifiable, qualified, and knowledgeable person who has the authority to set up and change a process.
Avionics Special Emphasis Programs	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.
Baseline Interval	The baseline interval is the criticality value of the assessment (high, medium, or low).
Bundling (in reference to planning assessments)	Grouping specific assessments together regardless of criticality for better resource management.
Certificate Holder Assessment Tool (CHAT)	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.
Certificate Holder Evaluation Process (CHEP)	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.
Certificate Holder Maintenance Provider	An individual whom the certificate holder has identified for the responsibility for the accomplishment of any of its maintenance, preventive maintenance, or alterations.

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Term	Definition
Certificate Holder Operating Profile (CHOP) (Also known as the operating profile)	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.
Certificated Repair Station (CRS)	Part 145 repair station.
Certification Project Manager (CPM)	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.
Certification Project Team (CPT)	Responsible for the oversight functions of an initial certification.
Comprehensive Assessment Plan (CAP)	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.
Configuration Data	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.
Continual Operational Safety (COS)	Routine recurring PAs (routine surveillance through safety inspections). Also includes certificate management, the management of major changes in operation (i.e., system configuration change).
Contract Maintenance	Any maintenance, preventive maintenance, or alterations accomplished by a certificate holder maintenance provider.
Control Attribute	Checks and restraints designed into a process to ensure a desired result.

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Term	Definition
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.
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 position can be held by a Frontline Manager (FLM), an aviation safety inspector (ASI), 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.

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Term	Definition
En Route Inspection	An inspection of the in-flight operations of a certificate holder within the operational environment of the air transportation system. Requires management approval.
Essential Maintenance Provider (EMP)	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.
External Portal	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.
Frontline Manager (FLM)	FLMs provide first-level supervision to subordinate employees and manage the activities of one operating unit, project, or program area. FLMs report to middle or senior managers.
Geographic Resource	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.
Hazard	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.
Hazardous Materials (Hazmat)	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.
Identified Risk	A level of risk that is identified through various analysis techniques.
Individual Work Plan (IWP)	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.
Interfaces Attribute	Interactions between processes that must be managed in order to ensure desired outcomes.

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Term	Definition
Maintenance Implementation Procedures (MIP)	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.
Maintenance Special Emphasis Programs	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.
Master List of Functions (MLF)	A list of functions that a part 121, 135, or 145 certificate holder or applicant could perform.
Mitigate	An action needed to reduce the level of risk.
Monitor	A risk level within accepted limits and no action is required beyond the normal planning cycle.
National/Regional C DCT	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.
National Safety Analysis (NSA)	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.
New Hazard	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.
Off-Hour	Activities that occur outside of normal FAA duty hours, including weekends.
Office Roster	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.

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Term	Definition
Operating Profile (Also known as Certificate Holder Operating Profile (CHOP))	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.
Operational Risk	A risk indicator that has the potential to affect the operations of the certificate holder.
Operations Research Analyst (ORA)	Responsible for assisting the office personnel in collecting and analyzing certificate holder or applicant data.
Operations Specifications (OpSpecs)	Legal and binding contract between a certificate holder and the FAA that documents specifically how the certificate holder operation is conducted.
Organizational Risk	A risk indicator that has the potential to affect the organizational and environmental factors of the certificate holder.
Outsourcing	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.
Peer Group A	All part 121 certificate holders.
Peer Group B	Part 135—10 or more seats.
Peer Group C	Part 135—9 or less seats.
Peer Group D	Part 135—9 or less single-pilot only.
Peer Group E	Part 135 Helicopter Air Ambulance (HAA).
Peer Group F	Part 145 located within the United States.
Peer Group G	Part 145 located outside of the United States without Aviation Safety Agreement.
Peer Group H	Part 145 located outside of the United States with Aviation Safety Agreement.
Performance History	The results of the certificate holder's operations over time.
Performance Measure	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.
Planning Cycle	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.

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Term	Definition
Preapplication Statement of Intent (PASI)	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.
Principal Inspector (PI)	The PI is the primary FAA spokesperson and decision maker for their specialty in all applications of SAS.
Procedures Attribute	Documented methods to accomplish a process.
Process	Policies and procedures designed to produce a desired result or end product for a certificate holder.
Process Measures Attribute	Used to validate a process and identify problems or potential problems in order to correct them.
Random Inspections (RI) (Ramp)	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.
Resource Work List (RWL)	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).
Responsibility Attribute	A clearly identifiable, qualified, and knowledgeable person who is accountable for the quality of a process.
Risk	The combination of predicted severity and the likelihood of the potential effect of a hazard.
Risk Analysis	The injury and damage potential of events related to hazards regarding the likelihood of occurrence and severity of resulting consequences.
Risk Assessment	The process by which the results of risk analysis are used to make decisions.
Risk Control	To reduce or eliminate the effects of hazards.
Risk Factors	Risk factors identify what must be controlled in order to reduce the level of risk.
Risk Indicator	Conditions that may create hazards in the certificate holder's systems.
Risk Management (RM)	The process composed of describing the system, identifying the hazards, and analyzing, assessing, and controlling risk.

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Term	Definition
Risk Severity Values	High—Loss (or breakdown) of an entire system or subsystem; accident or serious incident. Medium—Potential moderate damage to an aircraft, partial breakdown of 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.
Safety	The state in which the risk of harm to persons or property damage is reduced to, and maintained at or below, an acceptable level through a continuing process of hazard identification and RM. The quality of a system that allows the system to function under predetermined conditions with an acceptable level of risk.
Safety Assurance	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.
Safety Assurance System (SAS)	SAS is the Flight Standards Service (AFS) oversight of parts 121, 135, and 145 certificate holders and applicants.
Safety Attributes	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.
Safety Management System (SMS)	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.
Safety Performance Objectives	Measurable goals or desirable outcomes related to safety that the organization wants to achieve through the design of their processes.
Scalability	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.
Scoped DCT	A DCT created using a process that filters available questions to include only those that apply to a specific certificate holder/applicant.
Scope of Operation	Description of an applicant's or certificate holder's authorized activities in air commerce.
Shared Resource	A shared resource is an ASI who is assigned to conduct work activities for more than one certificate holder.

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Term	Definition
Standard DCT	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.
Subsystem	The groupings per system that characterize the major operations within that system.
System	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.
System Analysis Team (SAT)	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.
System Approach	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.
Systemic	Design/performance issues affecting one or more systems in a similar manner and magnitude. Also known as constant error.
System Safety	The application of special technical and managerial skills to identify, analyze, assess, and control hazards and risks associated with a complete system. System safety is applied throughout a system's entire life cycle to achieve an acceptable level of risk within the constraints of operational effectiveness, time, and cost.
System Stability	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).
Tailoring	Tailoring applies to the DAs and PAs to determine which DCTs are used for a particular assessment.
Team Coordinator (TC)	The TC organizes and coordinates the team activities. The TC monitors the ED DCT for accuracy and completeness.

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Term	Definition
Transfer	To reassign the risk to another FAA entity that has the authority to address the risk.
Unacceptable Risk	Risk that cannot be tolerated by the managing activity. It is a subset of identified risk that must be eliminated or controlled.

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VOLUME 10 SAFETY ASSURANCE SYSTEM POLICY AND PROCEDURES

CHAPTER 2 CONFIGURATION

Section 1 Safety Assurance System: Module 1 Configuration

10-2-1-1 GENERAL. The certificate holder or applicant defines its scope of operations and develops core processes, procedures, and programs for Federal Aviation Administration (FAA) approval or acceptance. The scope of operations enables the FAA to develop a Certificate Holder Operating Profile (CHOP) for a particular certificate holder or applicant. This operating profile allows the principal inspector (PI) or certification project manager (CPM) to plan and conduct oversight activities that are specific to the certificate holder or applicant's scope of operation.

NOTE: Security is an important feature of the Safety Assurance System (SAS) automation. If a SAS user detects a security breach or there is an indication of a security risk, he or she should immediately notify the office SAS Security Auditor or SAS administrator. See Volume 10, Chapter 1, Section 1, subparagraph 10-1-1-5I, for more information.

A. Purpose. There are three events that can trigger a change request to the configuration process: an initial certification, an FAA-initiated change, or a certificate-holder-initiated change. The outcome of this process is a final operating profile.

B. Scope. This section applies to the PI/CPM. In the configuration module, the PI/CPM will:

- Assist the certificate holder or applicant with the application process.
- Review the application package for accuracy and completeness.
- Accept or reject the submission.
- Review and update the operating profile.
- Finalize the operating profile.

10-2-1-3 RESERVED.

10-2-1-5 BACKGROUND.

A. Configuration Process. The configuration process provides a method for the PI/CPM to document a change request to the certificate holder's scope of operations. The configuration process interfaces with data from operations specifications (OpSpecs), enhanced Vital Information Databases (eVID), and configuration data to populate the operating profile. "Vitals" is a tab used in the SAS automation that includes environmental data from eVID.

NOTE: The SAS external portal is a secure, user-friendly, Web-based system that allows the PI/CPM and the certificate holder or applicant to exchange information and populate the SAS automation. The use of the external portal is mandatory for new applicants. Existing certificate holders are encouraged to use the external portal; however, if the certificate holder cannot or does not use the portal, then the PI must enter the configuration data into the automation through

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a change request. The PI is notified of certificate holder or applicant configuration change requests as they are submitted through the SAS external portal. See the SAS External Portal User's Guide for information on how to register for access to the external portal.

1) CHOP. The main purpose of the operating profile is to generate a specific set of Data Collection Tools (DCT) used to conduct Performance Assessments (PA) and Design Assessments (DA). The operating profile is developed from configuration data taken from eVID, OpSpec, and "SAS-only" data in the form of questions that the PI/CPMs must answer. The operating profile represents a certificate holder's or applicant's scope of operations. The output of the operating profile is a tailored list of system, subsystem, and elements with their associated data collection questions. Having an accurate CHOP is essential to developing a comprehensive work program that is tailored to the certificate holder's or applicant's scope of operations.

NOTE: When the PI/CPM selects OpSpecs from the configuration data, those are the proposed OpSpecs for that configuration change. The PI/CPM will need to update the OpSpecs using the Web-based Operations Safety System (WebOPSS).

2) Validation of Configuration Data. Configuration data consists of OpSpec and Vitals data. This information is used to record pertinent data about the certificate holder or applicant. It is important that the information be current and accurate because work programs are generated utilizing this data. The certificate holder's Environmental Information still needs to be reviewed and updated annually in eVID. The certificate holder's Vitals Information is reviewed and updated annually in SAS.

3) Inputs from Analysis, Assessment, and Action (AAA) Module 5. SAS is a closed-loop system; therefore, decisions made in Module 5 AAA may require changes to the certificate holder's or applicant's configuration data in Module 1. For example, if during Module 5 AAA, the FAA finds that a certificate holder's existing program is not working, the PI may want to remove that program or make changes in the certificate holder's OpSpec. These changes are made in Module 1, Configuration.

B. Configuration Triggers. There are three possible triggers in the configuration process:

1) Initial Certification. Title 14 of the Code of Federal Regulations (14 CFR) part 121, 135, or 145 applications are included within the scope of the Certification Service Oversight Process (CSOP). When an applicant requests authorization to operate under part 121, 135, or 145, CSOP is used to review, accept, and sequence the application using the guidance found in Volume 11, Chapter 13.

NOTE: All changes in certificate status must first be coordinated with the Aviation Data Systems Branch (AFS-620).

2) FAA-Initiated Change. The FAA issues or revises a regulation or policy that affects the certificate holder system or its operating authority. As part of an evaluation, the FAA may require the certificate holder to revise one or more of its programs or systems, or modify one or more of its authorizations.

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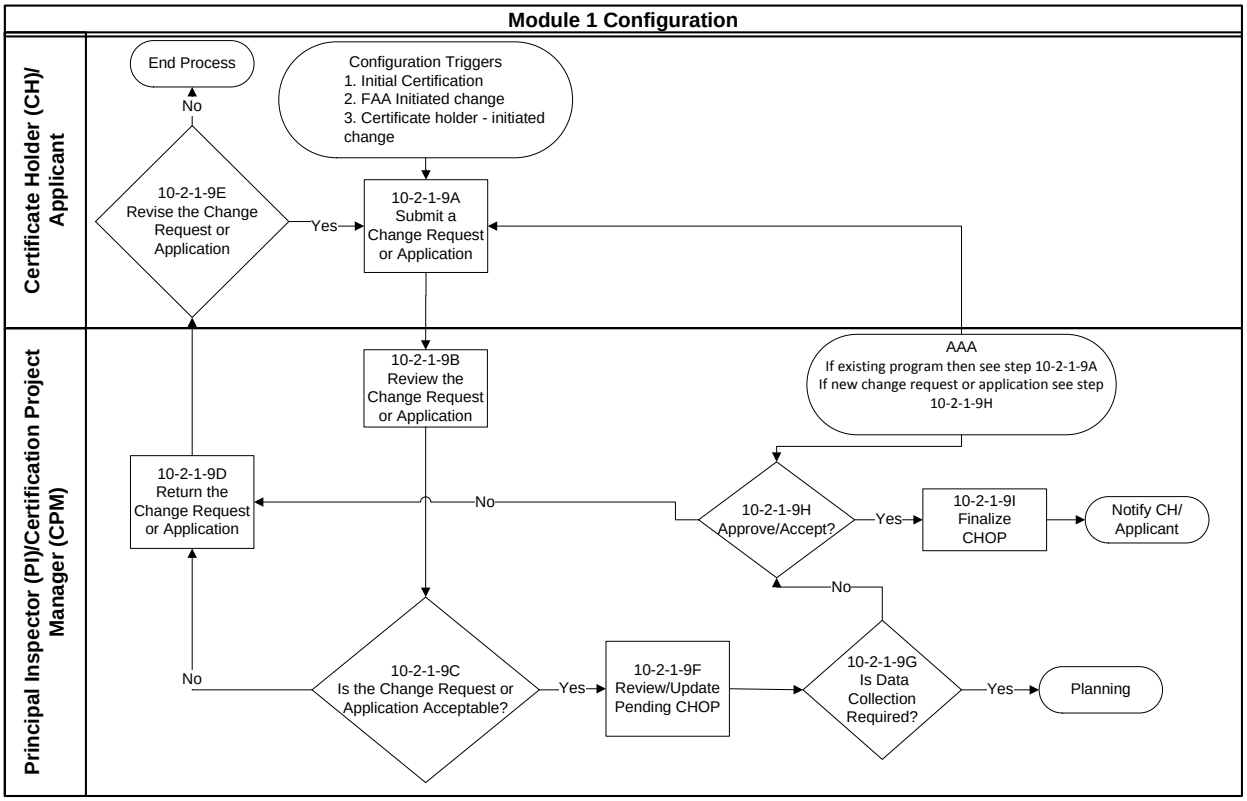
3) Certificate Holder-Initiated Change. The certificate holder proposes a change to its OpSpecs, programs, or manual revisions, such as:

- Cargo to passenger;
- Supplemental to domestic;
- Adding a new aircraft type;
- Changes to training programs; and/or
- Any other changes that affect the certificate holder's operating environment.

10-2-1-7 CONFIGURATION.

Figure 10-2-1A. Module 1 Configuration Process Flowchart



10-2-1-9 PROCEDURES.

A. Submit a Change Request or Application (see flowchart process step 10-2-1-9A).

1) Initial Certification. An applicant for a part 121, 135, or 145 certificate must submit an application package to the certificate-holding district office (CHDO) through the use of the SAS external portal. The applicant will have access to Module 1 for configuration data and to Module 4 for Element Design DCTs (ED DCT). The CPM is notified of configuration change requests as they are submitted through the SAS external portal.

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NOTE: The applicant will have to upload a signed Preapplication Statement of Intent (PASI) to the SAS database as part of the Formal Application.

2) FAA-Initiated Change. The FAA may amend OpSpecs or require program revisions when safety in the public interest requires such action. Amendments or revisions can result from significant changes to the certificate holder's operating environment or safety concerns. If the certificate holder does not use the SAS external portal, the PI must enter the configuration data into the automation with a change request.

3) Certificate-Holder-Initiated Change. The applicant may submit the request in a letter form or through the use of the SAS external portal. If the applicant uses the external portal, the certificate holder will have access to Module 1 for configuration data and to Module 4 for ED DCTs (if required). Regardless of who initiates the change, the certificate holder must submit documentation for the FAA to evaluate the impact of the change.

a) Although the use of the SAS external portal is not required for existing certificate holders, it is highly recommended. If the certificate holder cannot or does not use the SAS external portal, the PI must enter the configuration data into the automation with a change request.

b) Certificated/certified repair stations (CRS) and applicants located within the United States will have the ability to use the SAS external portal. International Field Offices (IFO) will enter applicant and configuration changes into the automation for repair stations located outside of the United States.

B. Review the Change Request or Application (see flowchart process step 10-2-1-9B).

1) Certificate Holder Change Request. When the PI receives a request for a new or changed scope of operation, the PI follows the FAA procedures applicable to that request and reviews the change request for content, quality, and if the change request accurately represents the proposed scope of operations. The goal of this review is to determine what effect the change request will have on the certificate holder's system and the operating profile.

2) Application Package. When the CPM receives a request for an application, the CPM follows the FAA procedures applicable to that request and reviews the application package for content, quality, and if the application accurately represents the applicant's proposed scope of operation. The goal of this review is to determine if the certification process can begin.

C. Is the Change Request or Application Acceptable? (see flowchart process step 10-2-1-9C). If the change request is acceptable, then see step 10-2-1-9F, Review/Update the Pending CHOP. If the change request is not acceptable, then see step 10-2-1-9D, Return the Change Request or Application. See Figure 10-2-1B, Acceptance of the Change Request or Application Package (Sample Letter).

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D. Return the Change Request or Application (see flowchart process step 10-2-1-9D). If the PI/CPM determines the change request or application is unacceptable, the PI/CPM must return the entire change request or application to the certificate holder or applicant stating the reasons why it is returned. See Figure 10-2-1C, Return of Change Request or Application Package (Sample Letter).

E. Revise the Change Request or Application (see flowchart process step 10-2-1-9E). The certificate holder or applicant reviews the PI's or CPM's comments, makes the appropriate corrections to the change request or application package, and resubmits it. The certificate holder or applicant has the option to withdraw the change request or application. If the change request or application is withdrawn in the automation, then it can only be resubmitted by starting the process over.

F. Review/Update Pending CHOP (see flowchart process step 10-2-1-9F). The PI/CPM reviews the pending operating profile changes to ensure it contains all the system/subsystems, elements, and questions applicable to the certificate holder's or applicant's change request or application package. If the pending CHOP does not contain the applicable information, then the PI/CPM can update the information.

NOTE: If a request for initial European Aviation Safety Agency (EASA) approval is added as a configuration change for a Peer Group F certificate holder, the PI will update the Vitals information by selecting "EASA Listed" and entering "PEND" in the EASA Certificate Number field, along with the QMS (Quality Monitoring System) Contractor information and EASA Accountable Manager. Upon acceptance of the application package and receipt of the EASA Part 145 approval, the PI will update the Vitals by replacing "PEND" with the EASA certificate number.

G. Is Data Collection Required? (see flowchart process step 10-2-1-9G). The PI/CPM determines if an Element Design Assessment (EDA) or Custom Data Collection Tool (C DCT) is required to evaluate the change request or application package. Once the PI/CPM selects the assessment or C DCT, that assessment or C DCT is automatically added to the Comprehensive Assessment Plan (CAP). The data collected is evaluated in Modules 4 and 5 before the change can be approved or accepted. If data collection is not required, then see step 10-2-1-9H, Approve/Accept.

NOTE: If a new Essential Maintenance Provider (EMP) is added as a configuration change, the automation will add a C DCT to the CAP with an assigned due date 3 years from the current quarter.

NOTE: If an Initial/Renewal Certification (Peer Group H) is added as a configuration change, the automation will add a C DCT to the CAP with an assigned due date as the last day of the next quarter.

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H. Approve/Accept? (see flowchart process step 10-2-1-9H). If the PI/CPM affirms the DA based on the results of Module 5, Analysis, Assessment, and Action, then see step 10-2-1-9I, Finalize CHOP. If the PI/CPM does not affirm the design, then see step 10-2-1-9D, Return the Change Request or Application.

NOTE: When the PI/CPM approves or accepts the change request or application, the automation does not automatically notify the certificate holder or applicant of this status unless the SAS external portal is used. The PI/CPM may have to follow up with the notification. See subparagraph J, Notify the Certificate Holder or Applicant, for further information.

I. Finalize CHOP (see flowchart process step 10-2-1-9I). After the PI/CPM approves or accepts the change, the operating profile is considered finalized and the vitals are updated. However, if the change affected a change in OpSpecs, then the PI/CPM will need to update the OpSpec using WebOPSS. Once all the changes have been made, the PI/CPM should validate the changes in the operating profile and the configuration data.

J. Notify the Certificate Holder or Applicant. The PI/CPM can notify the certificate holder or applicant of the approval or acceptance of the change by using the SAS external portal or a letter.

10-2-1-11 through 10-2-1-13 RESERVED.

10-2-1-15 JOB AIDS.

Figure 10-2-1B. Acceptance of the Change Request or Application Package (Sample Letter)

[FAA Letterhead]
[Date]

Mr. Rockwell J. Jones
President and CEO, MidSouth Airlines
601 Sky Harbor Blvd.
Little Rock, AR 72202

Dear Mr. Jones:

We reviewed your change request/application package and found it to be acceptable. Our acceptance of the change request/application package does not convey specific approval of the attachments. We will approve or accept the attachments after a detailed evaluation by the Federal Aviation Administration (FAA) team. We look forward to working with you and your team.

Sincerely,

John T. Smith

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Figure 10-2-1C. Return of the Change Request or Application Package (Sample Letter)

[FAA Letterhead]
[Date]

Mr. Rockwell J. Jones
President and CEO, MidSouth Airlines
601 Sky Harbor Blvd.
Little Rock, AR 72202

Dear Mr. Jones:

We reviewed your change request/application package, dated ____. We are returning your change request/application because of the following deficiencies:

- Résumés of Harvey Anderson, Director of Operations (DO), and S.F. Whipley, Director of Maintenance (DOM) were not included in your application.
- The compliance statement is incomplete. For example, you did not address Title 14 of the Code of Federal Regulations (14 CFR) part 121, § 121.XXX (Subject).
- Your company's general manual attachment describes methods of compliance with this regulatory section, and you should appropriately reference them in the compliance statement. As previously discussed, the compliance statement must address all applicable regulatory sections.
- The minimum equipment list (MEL) does not contain maintenance and operations procedures as required on the Master Minimum Equipment List (MMEL).

You must submit a new application when you have corrected all discrepancies noted above and any other omissions that exist. Please contact us if we can be of any further assistance in clarifying the requirements for your application.

Sincerely,

John T. Smith

10-2-1-17 through 10-2-1-29 RESERVED.

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VOLUME 10 SAFETY ASSURANCE SYSTEM POLICY AND PROCEDURES

CHAPTER 3 PLANNING

Section 1 Safety Assurance System: Module 2 Planning

10-3-1-1 GENERAL. The principal inspector (PI)/certification project manager (CPM) assesses the certificate holder's or applicant's systems and operating environment for indications of hazards. This process helps to highlight risks and identify areas on which to focus attention. The Comprehensive Assessment Plan (CAP) is a tool for planning, documenting, and tracking assessments. The PI/CPM uses the CAP to add assessments and Data Collection Tools (DCT), adjust the resource order, adjust due dates of assessments, and record the reasons for making adjustments. The PI/CPM uses Risk Indicators in the Certificate Holder Assessment Tool (CHAT) to associate risk to the certificate holder's or applicant's proposed or current operating system.

NOTE: Security is an important feature of the Safety Assurance System (SAS) automation. If a SAS user detects a security breach, or there is an indication of a security risk, he or she should immediately notify the office SAS Security Auditor or SAS Administrator. See Volume 10, Chapter 1, Section 1, subparagraph 10-1-1-5I, for more information.

A. Purpose. The planning process is used to assess the scope of operation and develop a risk-based, data-supported CAP.

B. Scope. In the Planning Module, the PI/CPM will:

- Review and assess planning data;
- Review and update the CHAT;
- Review, adjust, and validate the CAP; and
- Forward the CAP to management for the next process, Module 3, Resource Management.

10-3-1-3 RESERVED.

10-3-1-5 BACKGROUND. SAS encompasses certification, routine surveillance, and certificate management processes for the Federal Aviation Administration (FAA) to perform oversight of certificate holders. It assesses the safety of Title 14 of the Code of Federal Regulations (14 CFR) parts 121, 135, and 145 certificate holder's operating systems using system safety principles, Safety Attributes, risk management (RM), and structured system engineering practices. SAS also assesses the requirement to provide service at the highest level of safety in the public interest. The planning module is used by the PI/CPM to develop a risk-based, data-supported CAP. This plan assists the PI/CPM with decisions about the certificate holder or applicant's compliance with regulations and the design of the programs. The planning module consists of the CHAT and CAP.

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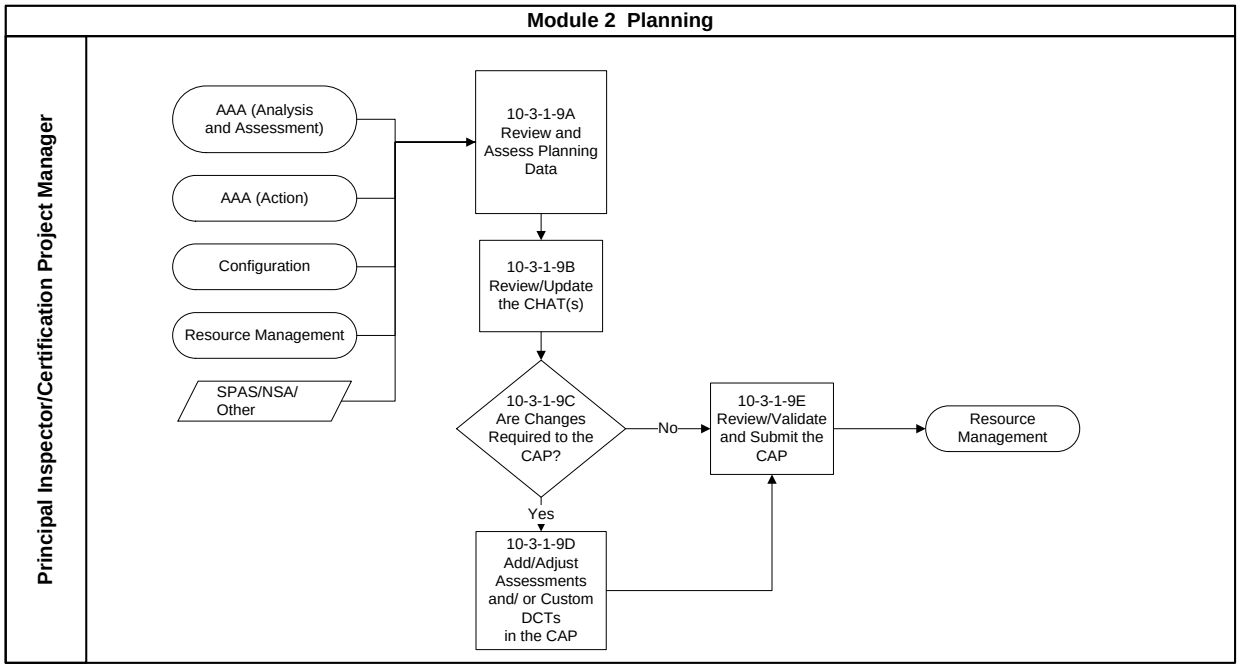
10-3-1-7 PLANNING.

Figure 10-3-1A. Planning Process Flowchart



10-3-1-9 PROCEDURES.

A. Review and Assess Planning Data (see flowchart process step 10-3-1-9A). The first step in this process is for the PI/CPM to review and assess the planning data to identify risk in the certificate holder's or applicant's system and operating environment. The review of planning data is conducted quarterly and/or annually depending on the certificate holder or applicant type. The PI/CPM assembles planning data from various sources. The following provides some examples of planning data sources and inputs.

NOTE: The planning cycle is quarterly for part 121 and annually for parts 135 and 145. The cycle frequency distinguishes the difference between part 121 and parts 135 and 145.

1) Inputs to Planning.

a) Analysis, Assessment, and Action (AAA). The input from the Analysis and Assessment (Module 5) portion of the AAA is used when the PI/CPM determines more data collection is required in order to make an assessment determination. If the PI determines that no action is required, the PI can update the CHAT if necessary and continue with normal surveillance.

b) Action. The input from the Action (Module 5) portion of the AAA is used when the PI/CPM determines, based on the assessment results, that change is required to be made to the current risk indicators in the CHAT. After making changes to the CHAT, the PI may make plans for future assessments.

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c) Configuration. Input from the configuration helps the PI/CPM plan activities specific to the certificate holder or applicant's new or changed scope of operation.

d) Resource Management. If management does not agree with the PI/CPM's plan, the PI/CPM may need to work with the Frontline Manager (FLM)/Office Manager (OM) to make changes to the plan.

e) Safety Performance Analysis System (SPAS). Provides a detailed data package for the selected element, system, or subsystem that is useful for planning and analysis.

f) National Safety Analysis (NSA). Performs national-level analysis which may result in a baseline interval (criticality) of an assessment and/or a national Custom DCT (C DCT). The NSA analyzes new hazards and suggests recommended actions to address the hazard and associated risks.

g) Other Sources of Planning Data:

1. Feedback from team members. An important source of planning data is feedback from the certificate holder or applicant team. This feedback can be gathered during the planning and/or review meetings.

2. Operations Research Analyst (ORA). The ORA is available to review internal and external data.

3. SAS reports. SAS reports are available to any SAS user from the SAS automation. A list of reports is located in the SAS Automation User Guide (AUG).

4. Program Tracking and Reporting Subsystems (PTRS). PTRS data can provide additional information to help the PI/CPM evaluate planning data.

2) Annual Planning Review and/or Meeting. Required for parts 121, 135, and 145. The annual planning review may be held in person or virtually. The purpose of the annual planning review is for the PI and office personnel to evaluate the certificate holder's or applicant's system and operating environment for risks. Based on the results of the annual planning review, the PI plans the CAP. The annual planning review can be a "rolling" review, which means that the PI can schedule each of his or her certificates at different times during the year as long as each certificate is reviewed at least once per year.

3) Quarterly Planning Review. Required for part 121 and optional for parts 135 and 145. The quarterly review may be held in person or virtually. The purpose of the quarterly review is for the PI and office personnel to review conditions that may affect the CHAT and CAP. Based on the results of the quarterly planning review, the PI adds or adjusts assessments to the CAP as necessary.

B. Review/Update the CHAT(s) (see flowchart process step 10-3-1-9B). Based on the review and assessment of the planning data, the PI/CPM updates the CHAT by selecting the risk indicators and then by selecting the associated PI option(s) (action) to address the risk. If risk

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indicators are selected, the PI/CPM must select an action and describe the reason for selecting the risk indicator and associated action in the comment text box.

NOTE: For an initial certification, the CPM will not use the CHAT until the setup of the initial oversight plan.

1) CHAT. The CHAT is an automated tool containing a list of risk indicators that helps the PI/CPM associate risk to a certificate holder's/applicant's current or proposed operating environment. There is one CHAT for Airworthiness and another for Operations. The CHAT contains a series of risk indicators that help the PI/CPM identify and document conditions that may expose hazards to their operation.

a) Risk Indicators. Risk indicators are groupings of safety- and/or performance-related data that reflect areas of potential risks and help prioritize the CAP (see Figure 10-3-1C, CHAT Risk Indicator and Descriptions by Peer Group, for a complete list and description). The CHAT contains three risk indicator categories.

1. Performance history. Performance history is the results of the certificate holder's operation over time.

2. Organizational. Organizational and environmental factors internal to the certificate holder organization, which can be managed to improve system stability and safety.

3. Operational. Organizational and environmental factors related to the certificate holder operations, which can be managed to improve system stability and safety.

b) PI Options. To evaluate the risk identified in the CHAT, the PI can select actions they would like to take to assess the scope of the risk and determine any mitigation needed. These options include:

PI Options	Description
Add Element Design Assessment(s) (EDA)	Select this option if you want to revalidate the design of an affected program(s), or in certificate management oversight to approve or accept new or changed programs. Additional considerations to determine if this option is necessary would be if the operator exhibits: • Inability to effectively perform a process, which may indicate an issue with the design; • Failure in system controls, including an inability to reduce problems, which may indicate an issue with the design; • Poorly documented procedures; and • Rapid and widespread changes in personnel, procedures, or training that impact the design.

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PI Options	Description
Adjust Priority or Resource Order	Select this option if you want to adjust the priority or resource order of a Performance Assessment (PA) or Design Assessment (DA). More specific considerations to determine if this option is necessary to use would be if the operator exhibits: • Increasing number of events or issues in the same system, subsystem, or element; • Multiple data points in same area(s); • Rapid and widespread changes in personnel, procedures, training, or infrastructure for a system, subsystem, or element; • Inconsistent implementation of a procedure, process, or training within a system, subsystem, or element; and • Perceived difficulty in performance of a system, subsystem, or element.
Add Element Performance Assessment (EPA)	Select this option if you want to target areas of interest. More specific considerations to determine if this option is necessary to use would be if the operator exhibits: • Repeated events in different systems, subsystems, or elements that interface; • Inconsistent implementation of a procedure, process, or training across systems, subsystems, or elements; • Perceived difficulty in performance across systems, subsystems, or elements; and • Broad changes to operations across systems, subsystems, or elements.
Add C DCTs	Select this option if you want to target areas of interest by using a select number of DCT questions. More specific considerations to determine if this option is necessary to use would be if the operator exhibits: • Repeated events in different systems, subsystems, or elements that interface; • Inconsistent implementation of a procedure, process, or training across systems, subsystems, or elements; • Perceived difficulty in performance across systems, subsystems, or elements; and • Broad changes to operations across systems, subsystems, or elements.
Identify New Hazard(s)	Select this option if a new hazard has been identified. 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. New hazards should not be deleted and are required to be tracked in the Action Item Tracking Tool (AITT).
Initiate Risk Management Process (RMP)	Select this option if you want to initiate an RMP for an existing hazard. The RMP is used to document and track an existing hazard and oversee and evaluate the disposition of the associated risk.
No Action Required	Select when the PI has determined that no action is required. No action is required when the risk has been previously identified and documented and action is being taken.

2) Complete the CHAT. Having an accurate CHAT is essential to developing a comprehensive plan that is tailored to the certificate holder's or applicant's scope of operations. The CHAT is updated based on the results of Module 5, AAA. Module 5 closes the loop in the SAS model. The CHAT is reviewed after the AAA, any time a change occurs, or at least annually. When the CHAT is submitted, the CHAT version is then updated. The risk indicators

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and PI Options will autopopulate on the Action Item Tracking Tool (AITT) once the CHAT is submitted.

3) CHAT Summary Report. The CHAT Summary Report is a list of certificate holder risk indicators and PI options, and is used to update the CAP.

C. Are Changes Required to the CAP? (see flowchart process step 10-3-1-9C). If the PI/CPM determines that, based on the results of the CHAT, changes are required to the CAP, see step 10-3-1-9D, Add/Adjust Assessments and/or Custom DCTs in the CAP. If the PI/CPM determines that changes are not required, then see step 10-3-1-9E, Review and Validate the CAP.

1) What is the CAP? The CAP is a 2-year plan to schedule System or Subsystem Performance Assessments (SPA). The following items may also be planned on the CAP (as needed):

a) EPAs and EDAs. EPAs and EDAs are added or adjusted based on known risks or safety priorities. EPAs may be added after the completion of the associated EDA.

b) Essential Maintenance Providers (EMP) (Part 121 Only). EMP inspections are scheduled every 3 years.

c) C DCTs. As needed.

d) En Route Inspections. As needed.

e) Random Inspections (RI) (Ramp). As needed.

2) Part 121/135 CAPs. There are two CAPs for part 121 and part 135. One CAP is for Operations and one for Airworthiness.

3) Part 121/135/145 Airworthiness CAPs. Parts 121, 135 and 145 have only one Airworthiness CAP. That CAP may be shared between Maintenance and Avionics. If one PI makes a change to the due date of an assessment, then it changes the CAP for the other PI. Because the CAP is shared, it is important that both the principal maintenance inspector (PMI) and principal avionics inspector (PAI) coordinate with each other regarding any CAP changes.

4) Certificate Holder Evaluation Process (CHEP) CAP. The CHEP CAP assessments are added to the end of the CAP. Otherwise, it functions like all other CAPs.

5) Initial Certification CAP. The initial certification CAP is placed with the regular CAP. The assessments will not be limited by quarter.

6) How is the CAP Organized? The CAP defaults to criticality, due date, certificate holder or applicant (alpha/numeric), and then the Master List of Functions (MLF) label. The CAP is organized into four groups:

- SPAs, EPAs, and EDAs;
- C DCTs and EMP inspections;

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- Initial certification assessments; and
- CHEP assessments.

D. Add/Adjust Assessments and/or Custom DCTs in the CAP (see flowchart process step 10-3-1-9D). The PI/CPM can add an assessment or DCT or adjust the CAP due dates and resource order based on the results of the CHAT and other risk-related factors. Assessments can also be generated as a result of data collection, AAA, and the AITT. Only action items from Configuration and the AAA autopopulate the CAP.

1) Adding an Assessment or DCTs. The PI/CPM needs to determine the number of DCTs necessary to assess the certificate holder's or applicant's performance or design for each assessment, based on risk.

a) SPA, EDA, or EPA. The PI/CPM determines if a team or a single aviation safety inspector (ASI) should complete the SPA, EDA, or EPA. All SPAs, EDAs, and EPAs go through the AAA.

b) C DCTs. The PI/CPM can create a C DCT from one specialty (Airworthiness or Operations) and from either PA or DA questions, but not both. Template C DCTs consist of prepopulated questions for focused inspections.

NOTE: When creating a C DCT, the PI/CPM can request that the DCT be assessed on its own by choosing "Needs Own Assessment." When the DCT is completed, it becomes available in Module 5 for AAA. If the PI determines that the C DCT does not need its own assessment, the individual element questions are included in the AAA the next time the related element is assessed.

c) RI (Ramp) and En Route Inspections. The PI/CPM can schedule RI (Ramp) and En Route Inspections.

d) Analysis. Both planned and ad hoc RI and En Route Inspections will go through AAA for analysis, but not as individual assessments. The RI and En Route Inspection results are populated in the AAA of the appropriate SPA based on the following:

- RI (OP) and En Routes (OP) for peer groups 121A, 135B, and 135E are linked to Subsystem 2.2, Aircraft Operations (OP), for the purposes of performing assessments.
- RI (OP) and En Routes (OP) for peer groups 135C and 135D are linked to System 2.0, Flight Operations (OP), for the purposes of performing assessments.
- RI (AW) and En Routes (AW) for peer groups 121A, 135B, and 135E are to be linked to Subsystem 4.3, Maintenance Operations (AW), for the purposes of performing assessments.
- RI (AW) and En Routes (AW) for peer groups 135C and 135D are to be linked to System 4.0, Aircraft Technical Operations (AW), for the purposes of performing assessments.

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NOTE: C DCTs, RI (Ramp) and En Route Inspections, and Dynamic Observation Reports (DOR) cannot be assigned to a team.

2) PI/CPM Considerations When Adding an Assessment and/or C DCT.

a) Risk Assessment. The PI/CPM identifies and evaluates known or perceived risks, and plans the appropriate assessments to address those risks. A PI/CPM may plan a combination of assessments and DCTs, such as adding additional DCTs to an SPA or selecting the option to add a specific EPA from within the System/Subsystem Performance Data Collection Tool (SP DCT). If the PI/CPM chooses to do this, there are many ways to approach this.

NOTE: The automation defaults to one assessment on the CAP.

b) Public Law (PL) 111-216, Airline Safety and Federal Aviation Administration Extension Act of 2010 (formally known as H.R. 5900). The term "random inspection" (RI) is the result of PL 111-216 and it supports on-demand work. An RI is an onsite inspection of air carriers that provide air transportation pursuant to a contract with a part 121 air carrier, to ensure such air carriers are complying with all applicable safety standards of the administration (refer to PL 111-216).

c) Geographic Resource (Geographic Airport Data Display (GEO ADD) Tool). One way a PI can determine if a geographic resource is needed is based on the results of a Geographic Review (GEO ADD Tool). The PI should review the GEO ADD Tool annually by the end of the fiscal year (FY).

d) PI Instructions. The PI/CPM can provide common instructions that apply to all DCTs included in an assessment. PI/CPM can also provide specific DCT instructions specific to each individual DCT. The instructions assist ASIs in conducting all the DCTs, as well as the FLM in making assignments and funding decisions. The PI/CPM may change the instructions prior to the DCT being submitted for data review.

1. Make, Model, and Series (M/M/S). Should the PI/CPM determine that data is needed to be collected on a specific M/M/S, he or she should include the specific information in the M/M/S selection.

2. Location. When the PI enters a location in the DCT, the ASI is required to complete the inspection at that specific location.

3) Resource Recommendation. The PI/CPM recommends individuals or teams by selecting the name from a drop-down list. If the PI is the only individual providing oversight, then the automation defaults to the PI. The PI/CPM can consider grouping specific assessments together regardless of criticality for better resource management.

NOTE: RIs related to "GEOADD" and PL 111-216 requirements should include instructions to the ASI to enter "GEOADD" or "PL 111-216," without quotes or spaces, and in capital letters, in the "Local/Regional/National Use" field in the RI common data field.

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4) Adjustment. The following are reasons the PI/CPM may need to adjust the CAP. If a CAP adjustment does occur, a justification may be required.

- The results of the CHAT indicate a change is needed;
- New elements added because of major changes to the certificate holder's or applicant's operations;
- Results of the AAA;
- Result of unassigned work from the previous planning cycle;
- Resolution of issues raised during CAP concurrence;
- The addition of PI instructions for completing the DCT;
- Geographic program requirements;
- National/Regional (NR) C DCT; and/or
- Realign assessment dates (bundling).

5) Due Dates and Resource Order. The PI/CPM should consider factors that may affect the CAP due dates and resource order (see Figure 10-3-1B, Baseline Intervals by Peer Group, and Table 10-3-1A, Intervals, Due Date, and Resource Order Definitions). If necessary, adjust either the resource order or the due date and include an explanation when the assessment is moved outside of the baseline interval. Some examples include:

- A planned change to a program in a future quarter;
- National guidance that directs a focused inspection;
- NSA inputs; and
- Part 145 or 135 certificate holders not exercising the privileges of their certificates.

NOTE: PIs assigned to part 145 or 135 certificate holders that are not exercising the privileges of those certificates (e.g., due to government contract requirements) may move the baseline performance assessments out 12 months. If the certificate becomes active, the PIs should adjust the baseline as applicable.

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Figure 10-3-1B. Baseline Intervals by Peer Group

Part	Peer Group	Certificate Holder Description	System Performance Assessment Intervals		
			System/Subsystem Criticality = High	System/Subsystem Criticality = Medium	System/Subsystem Criticality = Low
121	**A**	All Part 121 Certificate Holders	6 months	12 months	24 months
135	**B**	10 or more seats	6 months	12 months	24 months
	C	9 or less seats	N/A	12 months	24 months
	D	9 or less seats—single pilot only	N/A	12 months	24 months
	E	Helicopter Air Ambulance (HAA)*	6 months	12 months	24 months
145	**F**	Within the U.S.	N/A	12 months	24 months
	G	Outside the U.S. without Aviation Safety Agreement	N/A	12 months	24 months
	H	Outside U.S. with Aviation Safety Agreement	SAS automation does not schedule an SPA for Peer Group H. SAS schedules a Custom DCT for the certificate renewal, based on the last certificate renewal date.		

* Air ambulance (fixed-wing) operators with operations specification OpSpec A024 may be in Peer Group A, B, C, or D.

Table 10-3-1A. Intervals, Due Date, and Resource Order Definitions.

Baseline Interval	The baseline interval is the criticality value of the assessment (high, medium, and low). The PI/CPM can move a medium criticality above a high, or a low above a medium or high. Any vertical movement requires justification. The PI may shorten the interval based on need.
Adjusted Interval	An adjusted interval is when the PI/CPM changes the baseline interval to a shorter interval for a specified period of time. An adjustment cannot be made until the first assessment is complete.
Criticality	NSA establishes the criticality. Criticality is the likelihood that a failure of a certificate holder's or applicant's system, subsystem, or element could lead to an unsafe condition. • High criticality. A high likelihood that a failure in the certificate holder's or applicant's system, subsystem, or element could lead to an unsafe condition. • Medium criticality. A moderate likelihood that a failure in the certificate holder's or applicant's system, subsystem, or element could lead to an unsafe condition. • Low criticality. A low likelihood that a failure in the certificate holder's or applicant's system, subsystem, or element could lead to an unsafe condition. Criticality helps define the next due date or baseline interval.
Due Date	The default due date for all planned assessments is the last day of the quarter. The due date is the same as the baseline date, unless the PI makes an adjustment based on CHAT results or other factors.
Resource Order	Resource order is the order in which assessments are planned based on criticality and due dates.

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Grace Period	All assessments (including C DCTs) except for EMP inspections have a 30-day grace period between the time the due date is exceeded and the time they are considered overdue. The grace period begins at midnight the day after an incomplete assessment exceeds its due date. The grace period is used for data review and PI decision for the AAA. Initial Certification and CHEP will turn red during the grace period but continue to move forward.
Overdue	An assessment is overdue when: • Its grace period has expired (for SPAs); or • It passes its due date (for all others). An assessment becomes overdue at midnight following the last day of its grace period (for SPAs) or due date (for all others).

E. Review/Validate and Submit the CAP (see flowchart process step 10-3-1-9E).

1) Review/Validate the CAP. The PI/CPM reviews the CAP to ensure the information is accurate and that the assessments are balanced throughout the quarters and most importantly, risk based. For an Airworthiness CAP, the assessments may not appear to be balanced between PMIs and PAIs. Their respective workloads are balanced and risk based. The PI/CPM can make any final adjustments if necessary.

2) Submit the CAP for Resource Management. After the PI/CPM validates the CAP, he or she then submits the CAP for resourcing and concurrence. After the CAP is submitted, the PI/CPM should notify the FLM. The automation will send the FLM a notification once the CAP is submitted.

Figure 10-3-1C. CHAT Risk Indicator and Descriptions by Peer Group

Certificate Holder Performance History Risk Indicators		
Risk Indicator	**Description**	**Peer Group**
Accidents/ Incidents/ Occurrences	Data on accidents/incidents/occurrences and the certificate holder's response, corrective action planning, and ongoing followup activities determine this risk indicator's applicability. Accidents/incidents/occurrences may provide insights into areas of risk. Considerations to determine the presence of this risk indicator include: • Repeated events; • Number of events; • Severity of event(s) as defined by the current editions of Volume 7, Chapter 1, Sections 1 and 2 and FAA Order 8020.11; • Analysis of root cause; • Certificate holder controls; • Certificate holder followup to event(s); • Indicators of a trend with an escalation in severity; and • FAA and National Transportation Safety Board (NTSB) data sources. If root cause(s) and/or failure of event(s) are generally known and validated, consider the system(s), subsystem(s), and element(s) that relate to the failure or root cause. Consider also the SAS training subsystems and the Organizational Management System. If the certificate holder has not effectively and appropriately managed the events, also consider its manuals.	ALL

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Certificate Holder Performance History Risk Indicators		
Risk Indicator	**Description**	**Peer Group**
Enforcement Actions	Enforcement history of a certificate holder or the certificated airmen they employ determines this risk indicator's applicability. Enforcement action may indicate an unwilling attitude or inability to comply with safety standards. The greatest systemic safety risk is not from a specific operational event or its outcome, but rather from an airman or organization's unwillingness or inability to comply with safety standards and, most importantly, operating contrary to the core principles of Safety Risk Management. Considerations to determine the presence of this risk indicator include: • History and details of Compliance Action per Volume 14 to correct performance problems; • Corrective acting effectiveness; • Pending enforcements; • Management's attitude toward compliance; • Safety culture "attitude and strength"; and • Enforcement history. Enforcement action may indicate that this risk exists, requiring increased surveillance.	ALL
Surveillance History	Surveillance data that identifies surveillance problems may indicate nonmitigated or new areas of risks in the certificate holder's system. Considerations to determine the presence of this risk indicator include: • A decline in a specific system's performance; • An escalation of negative trending across systems; • Repeated concerns or ineffective corrective actions; • Certificate management negative trends tracked outside of SAS/SPAS (e.g., NPTRS, certificate holder SMS, etc.); and • Lack of surveillance data due to FAA resources. For negative SAS/SPAS data trends related to surveillance findings, associate the problem area(s) with the corresponding systems, subsystems, and elements. Focus on the areas that are the source of the adverse trend, including manuals, training, and personnel.	ALL
Department of Defense (DOD) Audits	The results of DOD audits and/or DOD Air Carrier Survey and Analysis Team monitoring data determine this risk indicator's applicability. These audits can help to identify hazards, risks, and systemic problems in the design and performance of its systems. Considerations to determine the presence of this risk indicator include: • Placement on DOD Close Watch program for safety concerns; • Temporary nonuse status for safety issues; • Recent DOD recertification after temporary nonuse status; • DOD survey results that are incomplete or not current; and • Removal from the DOD's list of qualified certificate holders. Evaluate and focus on those areas that correspond or are related to the adverse DOD findings.	ALL

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Certificate Holder Performance History Risk Indicators		
Risk Indicator	**Description**	**Peer Group**
Voluntary Disclosures	Data derived from voluntary reports of regulatory noncompliance and their corrective action(s) determine this risk indicator's applicability. Although corrective actions address the noncompliance, this may also indicate new areas of risks or those not fully mitigated in the certificate holder's system. Considerations to determine the presence of this risk indicator include: • Documented procedures for self-disclosure process; • Management's attitude towards submission of self-disclosures; • Participation in disclosure programs; • Corrective actions or repeated violations; • Employee awareness of the disclosure process; and • Repeated disclosures. Focus on the area of the voluntary self-disclosure(s). Drill down to the root cause(s) and relate these to the systems, subsystems, and elements. Evaluate interfaces such as training and personnel, and also consider the Organizational Management System.	ALL
Voluntary Programs	The use of voluntary program(s) to identify ongoing RM issues and how program data is used to manage risk determine this risk indicator's applicability. These programs include Internal Evaluation Programs (IEP), Aviation Safety Action Programs (ASAP), flight operations quality assurance (FOQA), or Independent Flight Safety programs such as the Commercial Aviation Safety Team (CAST). Voluntary data aids in hazard/risk identification and management of corrective actions. Considerations to determine the presence of this risk indicator include: • Determination of root cause(s); • Documented disclosure or reporting process procedures; • Management's attitude towards voluntary program participation; • Program effectiveness; • Repeated noncompliance; • Implementation of corrective actions; • Personnel awareness and use of voluntary programs; • Program trends; and • Participation in voluntary programs. Associate the data that causes concern with the applicable systems, subsystems, or elements. Evaluate interfaces such as training and personnel, and also consider the Organizational Management System.	ALL
Safety Hotline and Complaints	Documented complaints (including consumers, employees, whistleblowers, vendors, or other certificate holders) determine this risk indicator's applicability. Considerations to determine the presence of this risk indicator include: • Multiple complaints in same area(s) of concern; • A complaint in areas of concern; • Resolution history; • Implementation of corrective action; and • Effective and appropriate management of events. Focus on the subject area and nature of the complaint(s). Associate the data that causes concern with the applicable systems, subsystems or elements. Evaluate interfaces such as training and personnel, and also consider the Organizational Management System.	ALL

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Certificate Holder Organizational Risk Indicators		
Risk Indicator	**Description**	**Peer Group**
Key Management Changes	Key management (as defined in 14 CFR part 119 or 145) changes determine this risk indicator's applicability. Any changes, regardless of operational experience, could significantly affect operational stability. Considerations to determine the presence of this risk indicator include: • SPAS flags; • Effects identified from key management changes (regardless of SPAS flag); • Rapid and widespread changes in key management in multiple departments or operational areas; and • Key management assuming multiple roles. Volume 6, Chapter 2, Section 18, Evaluation of an Operator's Management of Significant Changes, discusses in detail the issues of RM for part 121 and 135 certificate holders. This section includes a decision aid for scoring risk as it relates to rapid growth/downsizing. Use this decision aid to determine what action to take based on the risk.	ALL
Financial Conditions	Reports of a certificate holder's financial difficulty, financial statements generated by the certificate holder, or the Department of Transportation's (DOT) Economic Authority determine this risk indicator's applicability. During financial instability, the possibility for risk may increase due to a number of complex and interrelated causes, factors, and results. These may directly or indirectly impact various aspects of the certificate holder's systems, subsystems, or elements. Considerations to determine the presence of this risk indicator include: • Deferment of discretionary spending (capital expenditure, training, advertising, etc.); • Sale of assets (spare parts, aircraft, lease back, operational routes, etc.); • Loss of significant vendors; • Delays in meeting payroll and other financial obligations; • Entrance into Debtor in Possession (e.g., bankruptcy); and • Effective and appropriate management of events. Volume 6, Chapter 2, Section 18, discusses in detail the issues of RM for part 121 and 135 certificate holders. This section includes a decision aid for scoring risk as it relates to financial conditions. Use this decision aid to determine what action to take based on the risk.	ALL

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Certificate Holder Organizational Risk Indicators		
Risk Indicator	**Description**	**Peer Group**
Change in Other Management Personnel	Changes within major lines of business (safety, quality assurance (QA), engineering, operations, and maintenance departments) determine this risk indicator's applicability. Regardless of the certificate holder's size, personnel changes could significantly impact the operational stability if processes are not in place to manage the change. Considerations to determine the presence of this risk indicator include: • Sudden change in management; • Significant change rate in management within maintenance and operations organization(s); • Retraining/cross-training required for retained and new personnel or for expanded job functions; • Prior history of middle management change; • Rapid or widespread changes in management in multiple departments or operational areas; and • Effective and appropriate management of events. Volume 6, Chapter 2, Section 18, discusses in detail the issues of RM for part 121 and 135 certificate holders. This section includes a decision aid for scoring risk as it relates to rapid growth/downsizing. Use this decision aid to determine what action to take based on the risk.	ALL
Turnover in Personnel	High-volume turnover in personnel who are required to produce the quality of systems, maintenance, and operations throughout the organization determine this risk indicator's applicability. A high turnover of operations or maintenance personnel can increase the potential for risk. Considerations to determine the presence of this risk indicator include: • Rate of turnover in personnel; • Replacement personnel qualifications; • Turnover within the maintenance and operations organizations; • Cross-training to cover the vacated positions; • Turnover in safety-sensitive areas; and • Effective and appropriate management of events. Volume 6, Chapter 2, Section 18, discusses in detail the issues of RM for part 121 and 135 certificate holders. This section includes a decision aid for scoring risk as it relates to rapid growth/downsizing. Use this decision aid to determine what action to take based on the risk.	ALL

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Certificate Holder Organizational Risk Indicators		
Risk Indicator	**Description**	**Peer Group**
Reduction in Force	Workforce reductions, layoffs, or buyouts determine this risk indicator's applicability. The impact of workforce reduction can increase the potential for system failure or noncompliance. The safety impact depends on the reduction itself, the reason it occurred, and what/who was involved. Considerations to determine the presence of this risk indicator include: • Timing or synchronization of reduction in personnel; • Reduction within the maintenance and operations organizations; • Reduction in experienced, safety-related, or training personnel; • History of comparable reductions in workforce; • Rapid and widespread reduction in safety-sensitive areas; and • Effective and appropriate management of events. Volume 6, Chapter 2, Section 18, discusses in detail the issues of RM for part 121 and 135 certificate holders. This section includes a decision aid for scoring risk as it relates to rapid growth/downsizing. Use this decision aid to determine what action to take based on the risk.	ALL
Rapid Growth or Downsizing	The addition/reduction of aircraft, repair station ratings, routes, employees, programs, or business practices (e.g., increase/decrease in aircraft utilization) and other operational areas determine this risk indicator's applicability. Considerations to determine the presence of this risk indicator include: • Development and implementation of business plan(s); • Reliability rates, minimum equipment list (MEL) management, turn times between flights, and crew rest requirements; and • Effective and appropriate management of events. Volume 6, Chapter 2, Section 18, discusses in detail the issues of RM for part 121 and 135 certificate holders. This section includes a decision aid for scoring risk as it relates to rapid growth/downsizing. Use this decision aid to determine what action to take based on the risk.	ALL
Merger or Acquisition	The details of the merger or acquisition (combination of divergent corporate and organizational structures and safety cultures, or simply a name change) determine this risk indicator's applicability. The inadequate management of a merger or acquisition may negatively impact the certificate holder's ability to perform continued compliance and safe operating procedures. Considerations to determine the presence of this risk indicator include: • Effective management of the certificate holder's procedures, controls, and process measures; • Experience with the new type and complexity of the operation; • Interfaces between processes, procedures, and programs across departments; • Adherence to new processes, procedures, and programs; • Transition plan for accomplishing the merger or acquisition; and • Effective and appropriate management of the events. Volume 6, Chapter 2, Section 18, discusses in detail the issues of RM for part 121 and 135 certificate holders. This section includes a decision aid for scoring risk as it relates to rapid growth/downsizing. Use this decision aid to determine what action to take based on the risk.	ALL

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Certificate Holder Organizational Risk Indicators		
Risk Indicator	**Description**	**Peer Group**
Labor Management Relationship	The relationship between the certificate holder's management and its labor organizations determines this risk indicator's applicability. Since a threatened or actual shutdown in operations can have an adverse economic impact on a certificate holder, poor labor–management relations negatively impact the stability of a certificate holder's systems. Considerations to determine the presence of this risk indicator include: • Informational picketing; • Newspaper advertisements, billboards, or other methods that describe lack of contract negotiations or bargaining; • Cross-utilization of employees in safety-sensitive areas due to the unrest (e.g., management working line functions in addition to their normal managerial responsibilities); • Requests for employee concessions by management and lower than industry average compensation and benefits; • Work stoppage due to labor unrest; and • Effective and appropriate management of the events. Consider the labor and management relationship issues that cause concern with the applicable systems, subsystems, or elements. Evaluate interfaces such as training and personnel, and also consider the Organizational Management System.	ALL
Relationship with FAA and Compliance Attitude	The working relationship between certificate holder personnel and FAA personnel assigned to oversee the certificate holder (i.e., level of communications, trust) determines this risk indicator's applicability. A weak communications infrastructure between parties can have a negative impact on certificate holder operations, quality, and safety. This, in turn, can affect the stability of the certificate holder's systems and may be an indication of risk. Considerations to determine the presence of this risk indicator include: • History of communications between the certificate holder and assigned FAA personnel; • Willingness to share data and findings with assigned FAA personnel; • Reception of FAA recommendations and suggestions; • Cooperation with assigned FAA personnel; and • Participation in voluntary programs. Consider which system(s), subsystem(s), and element(s) are directly affected by the lack of cooperation and/or communication. Evaluate interfaces such as training and personnel, and also consider the Organizational Management System.	ALL
Human Factors	Interactions of employees with the certificate holder's system, procedures, and controls determine this risk indicator's applicability. A certificate holder's failure to consider human factors when implementing procedures and controls could increase the level of risk in the system. Considerations to determine the presence of this risk indicator include: • Human factors addressed in systems; • Errors or violations related to human factors; and • Effective and appropriate management of events. Human factors issues could potentially impact every certificate holder system, as all systems involve human input and interaction. Consider which system(s), subsystem(s), and element(s) are affected. Evaluate interfaces such as training and personnel, and also consider the Organizational Management System.	ALL

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Certificate Holder Operational Risk Indicators		
Risk Indicator	**Description**	**Peer Group**
Age of Fleet	Many aircraft of the current U.S. commercial fleet are considered to be aging aircraft. The age of the fleet must be considered to determine this risk indicator's applicability. The age of a certificate holder's fleet can impact its systems. Considerations to determine the presence of this risk indicator include: • Management of operational risk associated with aging aircraft; • Aging aircraft identification process; • Communications flow regarding the maintenance and operational requirements of an aging fleet; • Corrective action plans; • Maintenance program associated with aging aircraft; • Aircraft approaching the timeline for aging aircraft; and • Effective and appropriate management of events. Aging aircraft impacts the aircraft technical operations system. Consider which system(s), subsystem(s), and element(s) are affected. Evaluate interfaces such as training and personnel, and also consider the Organizational Management System.	ABCDE
Varied Fleet/ Configuration	A certificate holder with a varied fleet or mixed configuration consists of: • Different aircraft types; • A mix of models and series of the same type; or • A number of different configurations of the same make and model within the same fleet. The ability to maintain or operate a varied fleet/configuration determines this risk indicator's applicability. Considerations to determine the presence of this risk indicator include: • Management structure to handle the impact of a varied fleet mix and mixed fleet configuration; • Class ratings (for air agencies); • Impact on the certificate holder's maintenance program; • Impact on the certificate holder's operations program; • Impact on the certificate holder's training program; • Controls for the varied fleet mix and mixed fleet configuration; • Performance history with varied fleet mix and mixed fleet configuration; • Tooling, equipment, and facilities; and • Appropriate or effective management of events. Maintenance or operation of varied fleet or mixed configuration could potentially impact every certificate holder system. Consider which system(s), subsystem(s), and element(s) are affected. Evaluate interfaces such as training and personnel, and also consider the Organizational Management System.	ALL

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Certificate Holder Operational Risk Indicators		
Risk Indicator	**Description**	**Peer Group**
Change in Aircraft Complexity	Changes in aircraft complexity, programs, and/or air agency ratings may require additional procedures and training. Considerations to determine the presence of this risk indicator include: • Controls and process measures for managing changes in operations and maintenance; • Experience of personnel with new technologies and the operational environment; • Audits to assess the effectiveness of the certificate holder's training programs and operation within its environment; • Performance history with incorporating complex aircraft; • Impact on system design or performance due to the change in aircraft complexity; and • Appropriate or effective management of events. Changes to an aircraft complexity could potentially impact every certificate holder system. Consider which system(s), subsystem(s), and element(s) are affected. Evaluate interfaces such as training and personnel, and also consider the Organizational Management System.	ALL
Outsource (Maintenance, Training, Ground Handling, etc.)	The use of vendors, suppliers, and contractors could introduce risks associated with certificate holder processes and programs. Considerations to determine the presence of this risk indicator include: • Confusion of procedures due to association with multiple certificate holders; • Contract personnel training and records for adequacy and accuracy; • DOD findings against the contractor employed by the certificate holder; • Contractor qualifications and abilities; • Frequent changes of contractors; • Historical data; • Effective audits; • Contractor's violation history; and • Certificate holder's oversight of all vendors and subcontractors. Use of outsource (maintenance, training, ground handling, etc.) could impact every certificate holder system. Consider which system(s), subsystem(s), and element(s) are affected. Evaluate interfaces such as training and personnel, and also consider the Organizational Management System.	ALL

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Certificate Holder Operational Risk Indicators		
Risk Indicator	**Description**	**Peer Group**
Certificate Holder's Management of Off-Hour Activities	A certificate holder's ability to manage its off-hour activities could impact overall effectiveness of all certificate holder systems. Considerations to determine the presence of this risk indicator include: • Amount, type, and complexity of activities; • Effective managerial oversight; • Availability of other resources (e.g., help desks, vendor support); • Exchange of information during shift change (e.g., shift change logs); and • Nontraditional work hours. Volume 6, Chapter 2, Section 18, contains the Certificate Holder's Management of Off-Hour Activities Decision Aid. Use this decision aid to determine what action to take based on the risk. Consider that while some components of the decision aid scoring are primarily geared toward airworthiness activities, an assessment can also be made for flight/ground operations in conjunction with the decision aid. Off-hour activities potentially impact every certificate holder system. Consider which system(s), subsystem(s), and element(s) are affected. Evaluate interfaces such as training and personnel, and also consider the Organizational Management System.	ALL
New/Changes to Certificate Holder Programs	Program additions, deletions, or changes determine this risk indicator's applicability. Considerations to determine the presence of this risk indicator include: • Documented changes to programs; • Changes that are motivated by cost-cutting; • System control(s) to support the new/changed program; • Staffing and training to support the changed programs; • Performance history with new/changed programs; and • Effective and appropriate management of events. New and major changes to certificate holder programs could impact every certificate holder system. Consider which system(s), subsystem(s), and element(s) are affected. Evaluate interfaces such as training and personnel, and also consider the Organizational Management System.	ALL

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Certificate Holder Operational Risk Indicators		
Risk Indicator	**Description**	**Peer Group**
Continuing Analysis and Surveillance System (CASS)	The procedures and data collection, data analysis, and trend reporting performed in support of the CASS to continuously monitor and correct deficiencies in its maintenance and inspection programs, as well as corrective action of any shortcomings identified by ASIs, determine this risk indicator's applicability. Considerations to determine the presence of this risk indicator include: • Recurring findings after the issues have been mitigated; • CASS corrective actions result in new problem(s); • Recurring CASS findings are associated with the same system(s), subsystem(s), or element(s); • CASS results for consistency with other outside audit results (e.g., FAA and DOD); • Internal audit system of CASS (e.g., Safety Audit Program); • CASS performance history as indicated by an IEP, safety program, or other equivalent program(s). Since CASS could impact every certificate holder system, consider which system(s), subsystem(s), and element(s) are affected.	ABCDE
Increases in Logbook Discrepancies, MEL Deferrals, or Requests for Escalation	The number and type of logbook discrepancies, MEL deferrals, and requests for escalation determine this risk indicator's applicability. Considerations to determine the presence of this risk indicator include: • Repeat maintenance logbook discrepancies; • MEL management; • Number of extensions to MEL requests; and • Requests for escalation of maintenance and inspection program items. Increases in logbook discrepancies, MEL deferrals, or requests for escalation could impact every certificate holder system. Consider which system(s), subsystem(s), and element(s) are affected. Evaluate interfaces such as training and personnel, and also consider the Organizational Management System.	ABCDE
Seasonal Operations	Attention to and preparation for seasonal operations may determine this risk indicator's applicability. Considerations to determine the presence of this risk indicator include: • Experience with seasonal operations; • Procedures and controls that support the operation; and • Audits of its seasonal operations. Seasonal operations could impact every certificate holder system. Consider which system(s), subsystem(s), and element(s) are affected. Evaluate interfaces such as training and personnel, and also consider the Organizational Management System.	ABCDE

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Certificate Holder Operational Risk Indicators		
Risk Indicator	**Description**	**Peer Group**
Complex Operations and Environmental Considerations	The certificate holder's ability to manage complex operations and environmental considerations that have influences on their scope of operation. The certificate holder's inability to adapt to such influences may lead to an unacceptable level of risk. Considerations to determine the presence of this risk indicator include: • Management of complex operations and environmental considerations; • Experience, training, or competency of personnel; and • Resource management. Complex operations and environmental considerations could impact every certificate holder system. Consider which system(s), subsystem(s), and element(s) are affected. Evaluate interfaces such as training and personnel, and also consider the Organizational Management System.	ALL
Relocation and Closing of Facilities	Relocation and closing of facilities determine this risk indicator's applicability. Considerations to determine the presence of this risk indicator include: • Performance history with regard to the relocation and closing of facilities; • Equipment and facilities; • Rate and pace of relocation and/or closing; • Training, documentation, and manual changes; • Background and experience of personnel at new facility; and • Management of the event(s). Relocation and closing of facilities could impact every certificate holder system. Consider which system(s), subsystem(s), and element(s) are affected. Evaluate interfaces such as training and personnel, and also consider the Organizational Management System.	ALL
Lease Arrangements	The use of lease arrangements (e.g., wet lease, dry lease, interchange agreements) determines this risk indicator's applicability. The variety of leasing arrangements a certificate holder enters into and different aspects of those arrangements can have an impact on its maintenance, training, operations, and programs. Considerations to determine the presence of this risk indicator include: • Establishment of operational control; • Audits of lease agreements; • Flightcrew and ground crew training; • Controls and interfaces in procedures required by lease agreement; and • Impact on normal certificate holder operations. Lease arrangements could impact every certificate holder system. Consider which system(s), subsystem(s), and element(s) are affected. Evaluate interfaces such as training and personnel, and also consider the Organizational Management System.	ABCDE

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Certificate Holder Operational Risk Indicators		
Risk Indicator	**Description**	**Peer Group**
Safety Management	The certificate holder's management of its safety-related processes determines this risk indicator's applicability. Considerations to determine the presence of this risk indicator include: • Designated safety responsibilities for management personnel; • Conducting risk assessments before implementing new systems, revising systems/processes, or developing new procedures, or after hazards or deficiencies have been identified in a design; • Proper identification of hazards; • Designing and implementing risk controls; • Internal audits, evaluations, monitoring employee reports, or investigation of operational events; and • Safety performance of the process and the followup action. Safety management could impact every certificate holder system. Consider which system(s), subsystem(s), and element(s) are affected. Evaluate interfaces such as training and personnel, and also consider the Organizational Management System.	ALL
Helicopter Air Ambulance (HAA) System Safety Risk Management/ Assessment Program	The certificate holder's management of the HAA System Safety Risk Management/Assessment Program determines this risk indicator's applicability. This program contains risk assessment and management procedures that identify risks in HAA operations. Considerations to determine the presence of this risk indicator include: • Overwater briefings and procedures; • Inadvertent instrument flight rules (IFR) procedures; • Visual flight rules (VFR) flight planning procedures; • Preflight risk analysis; • System safety risk management/assessment program; and • Adherence to the system safety risk management/assessment program. HAA System Safety Risk Management/Assessment Program(s) could impact every certificate holder system. Consider which system(s), subsystem(s), and element(s) are affected. Evaluate interfaces such as training and personnel, and also consider the Organizational Management System.	E
Status of Air Medical Resource Management (AMRM) Training	The certificate holder's management of the status of AMRM training determines this risk indicator's applicability. AMRM enhances the air medical community by promoting team cohesiveness and adaption during change through management of available resources. Considerations to determine the presence of this risk indicator include: • Training to accurately reflect the operating philosophies, policies, practices, and procedures of the organization; • Defined and implemented procedures, training, and operational practices; • Management's commitment to the training program; • Training curriculum (e.g., team building, communication skills, coordination involved in the decision making process, recurring training); and • Assessment process for training. AMRM could impact every certificate holder system. Consider which system(s), subsystem(s), and element(s) are affected. Evaluate interfaces such as training and personnel, and also consider the Organizational Management System.	BCDE

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Certificate Holder Operational Risk Indicators		
Risk Indicator	**Description**	**Peer Group**
Special Equipment	The certificate holder's management of special equipment determines this risk indicator's applicability. The General Operations Manual (GOM), maintenance manual, MEL, ground and flight training curricula, and operations specifications (OpSpecs) contain details regarding the certificate holder's special equipment (e.g., night vision goggles (NVG), polar equipment, Head Up Display (HUD), onboard cameras, and Forward-Looking Infrared (FLIR)). Considerations to determine the presence of this risk indicator include: • Training curriculum; • Consistent information across manuals; and • Testing and inspections requirements. Special equipment could impact every certificate holder system. Consider which system(s), subsystem(s), and element(s) are affected. Evaluate interfaces such as training and personnel, and also consider the Organizational Management System.	ABCDE
Handling of Hazardous Materials (Hazmat)/ Dangerous Goods	The certificate holder's management of hazmat determines this risk indicator's applicability. Handling of hazmat/dangerous goods could increase the level of risk in the system and processes. Considerations to determine the presence of this risk indicator include: • Procedures to accept, reject, handle, store, and load hazmat; • Procedures for notification of loaded hazmat on board an aircraft; and • Training curriculum for all direct and contracted employees that handle hazmat. Hazmat could impact every certificate holder system. Consider which system(s), subsystem(s), and element(s) are affected. Evaluate interfaces such as training and personnel, and also consider the Organizational Management System.	ALL
Other Risks Identified by the PI(s)	The PI's identification of risks not captured in the CHAT Risk Indicator Table above for the certificate holder, which requires further analysis.	ALL
GEO Political/ Health	The sociological interest in political systems is having confidence with who holds the power in the relationship of the government and its people and how the government's power is used. Some types of political systems are (sociology of political systems): • Authoritarianism; • Monarchies; and • Democracy. Consider the three types of political system when evaluating the health of the aviation authority (AA) in determining risk. The inability to conduct oversight would be a consideration in selecting this risk indicator.	ALL
GEO Economical: Health	Economic security is becoming a vital component to a country's ability to manage its relationships in the global aviation environment with the expansion of regional trade deals and the integration of global financial markets. Considerations to determine the presence of this risk indicator include: • Rising global geopolitical tensions; • Economic crises within the country; • Relationship between politics and economics, especially on an international scale; • Political factors relating to or influencing a nation or region; and • Agreements between countries.	ALL

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Certificate Holder Operational Risk Indicators		
Risk Indicator	**Description**	**Peer Group**
Aviation Authority (AA)/Health	The ability of the AA to conduct oversight of the Approved Maintenance Organizations (AMO) identified in the agreement. Considerations that influence this risk indicator include: • Training for inspectors conducting oversight of the AMOs; • Newly formed agreements between the United States and the AA for oversight of the AMOs; • Foreign policies: stability/finances of the AAs; and • Span and control: the capacity to effectively provide oversight due to distance and amount of AMOs.	ALL

10-3-1-11 through 10-3-1-29 RESERVED.

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VOLUME 10 SAFETY ASSURANCE SYSTEM POLICY AND PROCEDURES

CHAPTER 4 RESOURCE MANAGEMENT

Section 1 Safety Assurance System: Module 3 Resource Management

10-4-1-1 GENERAL. Resource management is an ongoing process to ensure that continued operational safety, initial certification, and Certificate Holder Evaluation Process (CHEP) resources are assigned to the highest risk priorities, as identified in the Comprehensive Assessment Plan (CAP). Frontline Managers (FLM) and Office Managers (OM) ensure that resources are assigned to tasks in resource order. Quarterly and yearly planning cycles consist of Design Assessments (DA), Performance Assessments (PA), and Custom Data Collection Tools (C DCT).

NOTE: Security is an important feature of the Safety Assurance System (SAS) automation. If you, as a SAS user, detect a security breach, or there is an indication of a security risk, you should immediately notify the office SAS security auditor or SAS administrator. See Volume 10, Chapter 1, Section 1, subparagraph 10-1-1-5I for more information.

A. Purpose. The resource management process assesses the CAP and assigns resources to execute the risk-based, data-supported plan.

B. Scope. In the Resource Management module, the FLM, OM, and/or Regional Coordinator (RC) will:

- Review the CAP.
- Determine if resources are available.
- Assign and adjust resources and allocate funding.
- Assign resources by resource order.
- Concur with the CAP.
- Determine if Regional Office (RO) concurrence is required.

10-4-1-3 RESERVED.

10-4-1-5 BACKGROUND. The SAS encompasses the certification, routine surveillance, and certificate management processes for certificate holders. It assesses the safety of Title 14 of the Code of Federal Regulations (14 CFR) parts 121, 135, and 145 certificate holder's operating systems using system safety principles, Safety Attributes, risk management (RM), and structured system engineering practices. SAS also assesses the requirement to provide service at the highest level of safety in the public interest. Module 3, Resource Management, provides the resources, training, and funding to execute the CAP.

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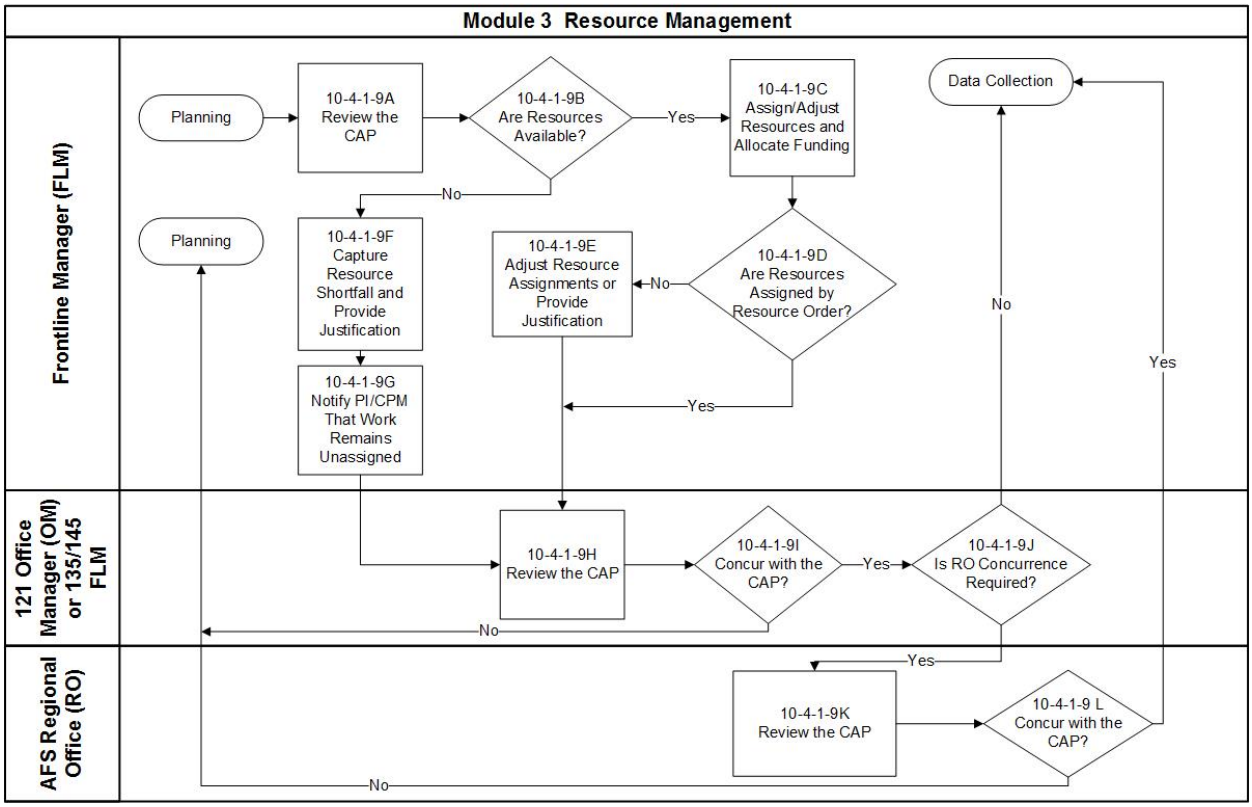
10-4-1-7 RESOURCE MANAGEMENT.

Figure 10-4-1A. Module 3 Resource Management Process Flowchart



10-4-1-9 PROCEDURES.

A. Review the CAP (see flowchart process step 10-4-1-9A). All items on the CAP must either be resourced or, if resources are not available, captured with a shortfall and justification. The FLM reviews the CAP for the following items to determine any impact to budget, training, qualifications, etc.:

- *Assessment due date(s) and any due date(s) exceeding the baseline interval to ensure justification is valid;*
- *Adjusted intervals;*
- *Adjustments to the resource order of assessments to ensure justification is valid;*
- *Assessments planned by resource order;*
- *Unplanned Data Collection Tools (DCT) to verify it is last in resource order;*
- *Geographic resource assignment requests; and*
- *Principal inspector (PI) instructions.*

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B. Are Resources Available? (see flowchart process step 10-4-1-9B). If the FLM determines resources are not available, then he or she will capture the resource shortfall and provide justification (see step 10-4-1-9F). If resources are available, then the FLM should consider the following items:

1) Training and Experience. PI training, experience, qualifications, and geographic location.

2) SAS Training. Ensure all training requirements are met to include the applicable SAS courses (see Volume 10, Chapter 1, Section 3 for SAS courses).

3) Availability. Determine if leave or training impacts the assignments.

4) Workload. Consider office-staffing and workload factors. The FLM should access the Resource Usage Summary in the automation to view work assignments.

5) Operating Factors. Consider the certificate holder or applicant's operating factors (seasonal, all cargo, peer group, fleet size, type, age, route structure, and rates).

6) Funding. Consider the availability of the funds to support the assessments. Assessments planned in the CAP must not be deleted because of the lack of funding.

C. Assign/Adjust Resources and Allocate Funding (see flowchart process step 10-4-1-9C). If resources are available to complete the CAP, then assign or adjust resources and allocate funding. The FLM/OM reviews the Resource Work List (RWL) to assign and adjust resources. DCTs are assigned to individual aviation safety inspectors (ASI) or a team assignment. The FLM should consider the following factors when assigning resources.

1) Office Roster. The office roster contains a list of the office personnel who can perform job functions in SAS. When FLMs assign work, they can select from any of the office personnel listed on the roster, regardless of the certificate. If an FLM intends to assign work to an ASI who is not assigned to that FLM, he or she must coordinate with the ASI's FLM prior to assigning work.

2) Assessment Details. The assessment details identify the appropriate individual, geographic resource, or team (DCT only) to perform the data collection.

3) Team Coordinator (TC). Consider the PI/certification project manager (CPM) recommendations for the TC. The TC should have experience in collecting data for the assigned element.

4) Changing Assignments. FLMs can change assignments at any time. This may include switching from unassigned to assigned, or reassigning an assessment from one ASI to another. The FLM can change assignments even if the work has already begun. If work has already begun, and the FLM changes, deletes, or edits an employee's data, they will annotate in the supporting comments who made the change, when the change was made, and why. The FLM must notify the ASI of any changes made to the original record.

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NOTE: If a DCT has already been started, the questions that were already answered would remain. The newly assigned ASI can continue to answer the rest of the questions. The answered questions from the previous ASI can be duplicated and answered again by the newly assigned ASI.

5) Aircraft Dispatch Safety Inspectors (DSI) and Cabin Safety Inspectors (CSI). DSIs and CSIs should be assigned to conduct specific System/Subsystem DCTs (SP DCT), and ED, Element Performance (EP), and Custom DCTs (C DCT) related to their specialty to help target risk analysis. DSIs and CSIs are subject matter experts (SME) who possess the knowledge and experience to assist in the interface with elements containing targeted question areas. In addition, they are great resources to assist with certain operations inspections items such as minimum equipment lists (MEL)/Configuration Deviation Lists (CDL)/nonessential equipment and furnishings (NEF), station operations, manual management, appropriate aircraft equipment, Extended Operations (ETOPS), aircraft performance, etc. The following table lists some of the DCTs but not all that should be conducted by a DSI or CSI. If a DSI or CSI is not available, then the OM should contact the RO to locate a DSI or CSI.

Table 10-4-1A. DCTs Conducted by DSIs or CSIs

NOTE: This applies to part 121 and large part 135 Certificate Management Teams (CMT) (Peer Groups A and B) and should be applied to peer groups in part 135 C through E whenever feasible.

SP DCT	Element	Dispatch/Cabin
3.1	3.1.1 & 3.1.2	Dispatch
3.3	3.3.1, 3.3.2, 3.3.3, & 3.3.4	Dispatch (and Cabin Safety 3.3.4)
5.0		Cabin Safety
5.1	5.1.1 & 5.1.2	Cabin Safety
5.2	5.2.1, 5.2.2, 5.2.3, & 5.2.4	Cabin Safety

6) Shared ASIs (Shared and Geographic Resources).

What is a shared resource?	A shared resource is an ASI who is assigned to conduct work activities for more than one certificate holder.
Who can designate a shared resource?	The regional Flight Standards division (RFSD) Manager and the OM have the authority to designate an ASI as being a shared resource.
Where can a shared resource be used?	The sharing of an ASI as a resource can occur within a particular office, within a particular region, or nationwide across regional boundaries.
Who does the shared resource report to?	Shared resources report to only one FLM, and all work requests are coordinated through the ASI's FLM. The ASI's FLM will make the final decision when there is conflict over work requests.

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What should be some of the workload considerations?	An ASI who is a shared resource must work with his or her FLM to ensure the ASI's workload is manageable. The ultimate responsibility of ensuring an ASI's workload is manageable belongs to the FLM. Some considerations are: • Experience of the ASI; • Number of certificate holders the ASI is assigned to; • Number and scope of DCT assignments; • Complexity of the certificate holder; • Certificate Management responsibilities; • Oversight of airmen and designees; and • Other duties as assigned.
How is the workload monitored?	FLMs can monitor SAS workload with the Resource Usage Summary Report; this report consists of details for work assignments by office, certificate holder, or resource and by speaking directly with the ASI.
What process do I use for a shared resource?	See Figure 10-4-1B, Shared Resource Request Process Steps.
What process do I use for a Geographic Resource request?	See Figure 10-4-1C, Geographic Resource Request Process Steps.

NOTE: Shared and geographic resources may not be part of a DCT team.

NOTE: A part 121 PI may not be a shared resource.

D. Are Resources Assigned by Resource Order? (see flowchart process step 10-4-1-9D). If the FLM makes assignments in resource order, then see step 10-4-1-9H, Review the CAP. If changes are required, then see step 10-4-1-9E, Adjust Resource Assignments or Provide Justification.

E. Adjust Resource Assignments or Provide Justification (see flowchart process step 10-4-1-9E). The FLM adjusts resource assignments for the available resources. If there are situations where resources are not assigned in resource order, then the FLM must provide a justification. If resources are not selected, then see step 10-4-9F, Capture Resource Shortfall and Provide Justification.

F. Capture Resource Shortfall and Provide Justification (see flowchart process step 10-4-1-9F). All items on the CAP must either be resourced or, if resources are not available, captured with a shortfall and justification. If resources are not available, whether it is due to a lack of funding or personnel, the FLM must select a reason and justification for the shortfall. This information is provided to the PI/CPM for future planning cycles. Below is a list of reasons why resources are not available:

- Other System or Subsystem Performance Assessments (SPA), Element Performance Assessments (EPA), or EDAs for surveillance;
- Configuration changes to existing certificate holder;

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- Other duties;
- On leave;
- Travel funding is unavailable;
- Not yet qualified; and/or
- Staffing shortages.

G. Notify PI/CPM that Work Remains Unassigned (see flowchart process step 10-4-1-9G). If work remains unassigned, the FLM is required to notify the PI/CPM. If an assessment could not be resourced, the PI/CPM can use the Surveillance History Risk Indicator to document the potential risk due to lack of resources. The next assessment on the CAP can be adjusted to address the potential risk.

H. Review the CAP (see flowchart process step 10-4-1-9H). For part 121, the OM reviews the CAP. For parts 135 and 145, the FLM reviews the CAP. The CAP must be reviewed for the following items:

- Assessment due date(s) and any due date(s) that exceed(s) the baseline interval;
- Adjusted intervals;
- Adjustments to the resource order of assessments;
- Assignment of resources by resource order;
- Unassigned DCT(s);
- Geographic Resource Request; and
- PI Instructions.

NOTE: All items are either resourced or, if resources are not available, captured with a shortfall and justification.

I. Concur with the CAP? (see flowchart process step 10-4-1-9I). During the yearly planning cycle, the FLM/OM concurs with the entire CAP. When PIs submit actions that trigger a new CAP concurrence during the planning cycle, the FLMs have the ability to concur per individual certificate holder.

NOTE: Table 10-4-1B shows when FLM or OM concurrence is required when changes to the CAP occur after the annual and/or quarterly planning process.

1) For the PIs that share a CAP and have different FLMs, it is important that both FLMs agree with the CAP prior to the FLM concurring with the CAP in the automation. Either FLM has the ability to concur with the CAP. Automation shows the “Concur” checkbox and the reason for the CAP concurrence under the PI who submitted the CAP.

2) For part 121, if the OM concurs with the CAP, then see step 10-4-1-9J, Is RO Concurrence Required. If the OM nonconcurs with the CAP, then he or she should discuss the matter with the FLM. The FLM should then discuss the matter with the PI/CPM. The PI/CPM may need to adjust the plan as necessary.

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3) For parts 135 and 145, if the FLM concurs with the CAP, then see step 10-4-1-9J, Is RO Concurrence Required. If the FLM nonconcurs with the CAP, then he or she should discuss the matter with the PI or CPM. The PI/CPM may need to adjust the plan as necessary.

J. Is RO Concurrence Required? (see flowchart process step 10-4-1-9J). The RO must concur when changes to the CAP exceed the baseline intervals by two or more quarters.

K. Review the CAP (see flowchart process step 10-4-1-9K). The RO reviews the changes to the CAP when required in Table 10-4-1C, RO Concurrence. If the requirements have been met, then see step 10-4-1-9L, Concur with the CAP.

L. Concur with the CAP? (see flowchart process step 10-4-1-9L). The RO concurs with the CAP. If the RO does not concur with the CAP changes, they will coordinate the issues with the office to determine an appropriate resolution.

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Table 10-4-1B. FLM/OM Concurrence

Part	When Concurrence is Required	FLM Concurrence	OM Concurrence
121	Resource order is changed for SPA.		Yes
121	Resource assignment status is changed from "Assigned" to "Unassigned."		Yes
121	Reassignment of an assigned resource.		Yes
121	Addition or removal of EDA, EPA, and C DCT.		Yes
121	Add or remove DCTs from an SPA and EPA.		Yes
121	Assignment of a Geographic Resource to a DCT.		Yes
121	Assessment is moved out one quarter.		Yes
121	Assessment is moved out two or more quarters.		Yes
135/145	Resource order is changed for SPA.	Yes	
135/145	Resource assignment status is changed from "Assigned" to "Unassigned."	Yes	
135/145	Addition or removal of EDA, EPA, and C DCT.	Yes	
135/145	Assignment of a Geographic Resource to a DCT.	Yes	
135/145	Reassignment of an assigned resource.	Yes	
135/145	Add or remove DCTs from an SPA and EPA.	Yes	
135/145	If assessment is moved out one quarter beyond the baseline quarter.	Yes	
135/145	If the assessment is moved out two or more quarters beyond the baseline quarter.	Yes	Yes

Table 10-4-1C. RO Concurrence

Part	When Concurrence is Required	RO Concurrence
121	If an assessment is moved out two or more quarters beyond the baseline interval.	Yes
135/145	If an assessment is moved out three or more quarters beyond the baseline interval.	Yes

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Figure 10-4-1B. Share Resource Request Process Steps

1) The FLM or the OM identifies ASIs who are shared in another office. Shared resources are identified in User Admin by selecting the "Shared ASI" role in the office that they are currently assigned to. The FLM, OM, or the Office Administrator from the office can assign the "Shared ASI" role to an ASI.

2) The FLM adds the shared resource ASI to the certificate holder or applicant team for the requesting office in User Admin.

3) On the CAP, the PI recommends the use of a shared resource. Shared resource must be the same specialty as the PI, either Operations or Airworthiness.

4) The PI identifies the shared resource in the recommendation field on the assessment details screen by including the shared resource's office next to the resource name.

5) Once the PI submits the CAP, the shared resource's FLM receives an assignment notification on the Individual Work Plan (IWP).

6) The shared resource's FLM/OM reviews the RWL and assigns the DCTs.

7) Once assigned, the shared resource ASI receives the DCT assignment on the IWP.

8) If an ASI is no longer a shared resource, then the "Shared ASI" role should be removed. Removal of the role will not prevent a shared resource from completing a DCT once the DCT has been assigned.

Figure 10-4-1C. Geographic Resource Request Process Steps

1) A PI/CPM determines a need for surveillance outside the certificate-holding district office (CHDO) geographic area of responsibility. The Geographic Airport Data Display (GEO ADD) tool may be used to aid in decisionmaking.

2) A PI/CPM may select a "Geo Request" in the CAP recommended/assigned drop down and saves it. The automation sends notification to the FLM.

3) An FLM reviews the request.

a) If the FLM concurs, then he or she selects "Assign."

b) Automation sends notification to the OM.

4) If the FLM nonconcurs, then he or she will discuss with the PI/CPM. Document the resource shortfall using the procedure in subparagraph 10-4-1-9F.

a) If another resource is available in his or her office, the FLM will assign the request in Module 3 (no longer a Geographic Resource Request).

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b) If no resources are available within his or her office, the FLM leaves the request unassigned.

5) The OM reviews the request.

a) If the OM concurs, he or she selects "Concur."

b) The automation sends notification to the RC in the requesting region.

6) If the OM nonconcurs, he or she will discuss it with the FLM and/or the PI.

a) If a resource is available within the office, the OM assigns the request to the FLM. See Step 3a.

b) If no resources are available within his or her office, the request will remain unassigned. The FLM will document the resource shortfall using the procedure in subparagraph 10-4-1-9F.

7) The requesting RC reviews the request to determine the office closest to the location of the requested activity.

a) If the office is within the requesting region, then the RC will forward to the OM.

1. The automation sends notification to the OM.

2. Go to Step 9.

b) If a resource is available from within the RFSD office, then the RC will forward to a regional branch manager.

1. The regional branch manager assigns the request to a resource.

2. The automation sends notification to the assigned resource.

3. The automation updates the CAP to indicate a resource is assigned.

4. The automation sends a notification to the requesting PI and manager that a resource has been assigned.

8) If the office is located in another region, then the RC will forward the request to the receiving region's RC.

a) The automation sends notification to the receiving region RC.

b) Go to Step 9.

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9) The manager reviews the request for available resources.

a) If resources are available, then the manager assigns the request to a resource.

b) The automation sends notification to the resource.

c) The automation updates the requesting office CAP to indicate a resource has been assigned.

d) The automation sends notification to the requesting PI/CPM.

e) If resources are not available, the manager returns the request (RTR).

f) The automation sends notification to the RC.

10) The RC will identify alternate office personnel for potential resource.

a) If another office has a resource, then the RC will forward the request to that office.

b) Go to Step 9.

c) If no resources are available anywhere in the region, the requesting RC will RTR to the requesting office in coordination with division leadership team.

d) The automation notifies the requesting manager that the request is returned.

11) The resource completes the request.

10-4-1-11 through 10-4-1-29 RESERVED.

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VOLUME 10 SAFETY ASSURANCE SYSTEM POLICY AND PROCEDURES

CHAPTER 5 DATA COLLECTION, DATA REPORTING, AND DATA REVIEW

Section 1 Safety Assurance System: Module 4 Data Collection

10-5-1-1 GENERAL. Aviation safety inspectors (ASI) collect data in accordance with the Comprehensive Assessment Plan (CAP). Aviation safety technicians (AST) who are trained and qualified can provide technical support to ASIs during data collection activities if they are assigned to do so by their Frontline Manager (FLM). ASTs can provide technical support with the research and documentation; however, they cannot perform data collection.

NOTE: Security is an important feature of the Safety Assurance System (SAS) automation. If you, as a SAS user, detect a security breach, or there is an indication of a security risk, you should immediately notify the office SAS security auditor or SAS administrator. See Volume 10, Chapter 1, Section 1, subparagraph 10-1-1-5I for more information.

A. Purpose. ASIs use Data Collection Tools (DCT) to collect data. The DCT information helps the principal inspector (PI)/certification project manager (CPM) assess the certificate holder's or applicant's system performance and design.

B. Scope. This section applies to ASIs. In the Data Collection Module, the ASI will:

- Prepare for data collection.
- Collect data.
- Determine if safety issues or regulatory issues were identified.
- Act on safety issues and inform the PI/CPM of regulatory issues.
- Determine if safety issues were observed outside the assigned DCT.
- Create a Dynamic Observation Report (DOR).

10-5-1-3 RESERVED.

10-5-1-5 BACKGROUND. SAS encompasses the certification, routine surveillance, and certificate management processes for certificate holders. It assesses the safety of Title 14 of the Code of Federal Regulations (14 CFR) parts 121, 135, and 145 certificate holder's operating systems using system safety principles, Safety Attributes, risk management (RM), and structured system engineering practices. SAS also assesses the requirement to provide service at the highest level of safety in the public interest. Module 4, Data Collection, contains the processes for data collection, reporting, and review.

A. DCTs. There are three levels of DCTs: System, Subsystem, or Element. Each DCT has a purpose and objective statement and associated Safety Attributes: Responsibility, Authority, Procedures, Controls, Process Measures, and Interfaces. DCTs are not checklists of questions to ask the certificate holder's or applicant's personnel; instead, they are a means to assess a System, Subsystem, or Element.

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1) Purpose. The purpose statement defines the desired outcome for which the certificate holder is responsible.

2) Objective. The objective statement establishes the Federal Aviation Administration's (FAA) oversight objective. Before the PI accepts or approves the certificate holder's process design, he or she uses the data ASIs collect to determine if the certificate holder is able to:

a) Comply with the regulations.

b) Achieve the desired outcome in the purpose statement.

3) Safety Attributes. SAS consists of six Safety Attributes to evaluate the certificate holder's or applicant's operating systems. The qualities of a system, (e.g., responsibility, authority, procedures, controls, process measures, and interfaces) should be present in a well-designed certificate holder or applicant system and process. The Safety Attributes provide a foundation for the DCTs so the PIs can make informed decisions about the certificate holder's or applicant's operating systems, including considerations of possible risks. Every DCT question is based on one of the Safety Attributes. The PIs can use the data provided by the Safety Attributes when they approve or accept programs or systems and analyze data collected during scheduled Performance Assessments (PA). PIs will consider the characteristics of each Safety Attribute in both the development (design) of the program and its outcome (performance that shows whether or not it works as intended). Although some Safety Attributes may not be required (by regulation) to approve a design or performance, incorporating Safety Attributes into the certificate holder's or applicant's design/performance will provide a greater chance of finding risks.

a) Responsibility. A clearly identifiable, qualified, and knowledgeable person who is accountable for the quality of a process.

b) Authority. A clearly identifiable, qualified, and knowledgeable person who has the authority to set up and change a process.

c) Procedures. Documented methods to accomplish a process. Procedures questions help verify that the certificate holder's documented processes identify who, what, when, where, and how personnel will accomplish tasks. The majority of the regulatory/guidance requirements are contained in procedures questions.

d) Controls. Checks and restraints designed into a process to ensure a desired result.

e) Process Measures. Measures used to validate a process and identify problems, or potential problems, in order to correct them.

f) Interfaces. Interactions between processes that must be managed in order to ensure desired outcomes.

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NOTE: System/Subsystem Performance Data Collection Tool (SP DCT), Element Performance Data Collection Tool (EP DCT), and Element Design Data Collection Tool (ED DCT) questions are all based on Safety Attributes; however, only the procedures questions contain regulatory and guidance references.

NOTE: In some situations, or for some peer groups, manuals and/or documentation may not be required or fully developed. If so, one or more of the Safety Attributes may not be readily observed. Regardless, ASIs should always assess the Safety Attributes throughout the certificate holder/applicant's practices. In some instances, a "No," or an "N/O" (not observable) answer may be appropriate. Generally, an "N/A" is not appropriate.

B. DCT-to-Go. Provides the ASI with the scoped DCT questions that can be printed or viewed with space for the ASI to write in responses.

C. Note. A note contains information to help the ASI better understand the question.

D. Specific Regulatory Requirements (SRR). Some questions validate compliance with SRRs (14 CFR). Questions that have SRRs appended to them indicate the question is based on a specific regulation (14 CFR). Questions that do not have an SRR appended to them are not based on a regulatory requirement, but are based on system safety principles and/or other FAA guidance. An unfavorable response to a question that does not have an SRR, while not a violation, may indicate a hazard with an increased level of risk (see Table 10-5-1B, Types of Responses).

NOTE: DCTs may contain answer sets that include Yes/No, Descriptive Scale (what did you see?), and Sampling (e.g., records or parts). Table 10-5-1A, Data Collection Type and Description, describes the different types of DCTs.

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Table 10-5-1A. Data Collection Type and Description

Data Collection Type	Description
System/Subsystem Performance Data Collection Tool (SP DCT)	**What Does it Contain?** SP DCTs contain standard Safety Attribute questions on how a system or subsystem is functioning. There are six standard Safety Attribute questions that are asked at either the system or subsystem level. • For parts 121, 135 (10 or more), and 135 helicopter air ambulance (HAA), standard Safety Attribute questions are asked about each element at the subsystem level. This allows us to capture specific information about each element and provide sufficient detail to see how the subsystems are functioning, and then make an assessment about the subsystem. • For parts 135 (9 or less), 135 (single-pilot), and 145, standard Safety Attribute questions are asked about each system; however, the "procedures" questions (whether system or subsystem) are always asked at the element level. This allows us to capture specific information about the system level and provide details to make an assessment about the system. • The SP DCT procedures questions are high-level questions that ask about a specific process or program. They are based on specific regulatory requirements (SRR) and guidance. EP DCTs and SP DCTs are directly related and support one another. SP DCTs include Safety Attribute questions at the element level. For example, SP DCT 1.1 asks the questions for 1.1.2, 1.1.3, etc. • Reviewing and/or answering the questions in the EP DCT will assist the aviation safety inspector (ASI) in answering the high-level SP DCT procedures question. • To review the associated EP DCT, the ASI can click on the "Related Element Questions" to view the EP DCT procedures questions (only for procedures DCT questions). ASIs can also print/save the associated EP DCT(s) from the "Prepare DCT" tab under "Related DCTs." Another option is that the ASI can add an EP DCT to their Individual Work Plan (IWP) from the SP DCT. Not all the EP DCT questions require a response, only the questions the ASI determines need a response to assist with answering the associated SP DCT question. • The ASI can duplicate questions if they are collecting data at another location, a different aircraft/facility, or when conducting a followup inspection as a result of an unfavorable finding and would like to capture that information on a new Common Data Field. **NOTE:** All SP DCT questions require a response. If an issue is noted during the SP DCT, then the ASI has the ability to open and drill down to the related EP DCT questions during the data collection process. The ASI can add one or more EP DCTs but is not required to answer all associated EP DCT questions. **Output:** Process observation is the expected output for the SP DCT, which is focused on the observation of certificate holder personnel performing a procedure or process.

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Data Collection Type	Description
	What Are the Response Choices? The response choices vary by question type and may include sampling and descriptive scale. Yes or No; “Not observable” may be used as appropriate.
Element Performance Data Collection Tool (EP DCT)	**What Does it Contain?** EP DCTs contain detailed performance questions about each element that mirror the Element Design Data Collection Tool (ED DCT) content. EP DCTs are accomplished at the element level and are linked to the related SP DCTs. **When is it Accomplished?** At the discretion of the principal inspector (PI) and the certification project manager (CPM). **Output:** Process observation is the expected output for the EP DCT, which is focused on the observation of certificate holder personnel performing a procedure or process. **What Are the Response Choices?** The response choices vary by question type and may include sampling and descriptive scale.

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Data Collection Type	Description
Element Design Data Collection Tool (ED DCT)	**What Does it Contain?** ED DCTs contain detailed design questions that mirror the EP DCT content. ED DCTs are accomplished at the element level. For initial certification, the ED DCT is used to validate initial certification programs. **Output:** An assurance that a certificate holder's programs are designed to comply with the intent of the regulations and incorporate system safety. **What Are the Response Choices?** Yes or No; "Not applicable" may be used as appropriate.
Custom Data Collection Tool (C DCT)	**What Does it Contain?** A C DCT is used to assess data outside the planned Performance Assessment (PA) or Design Assessment (DA). 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. • Combine Airworthiness and Operations questions. C DCTs can be used for focused special inspections such as Essential Maintenance Provider (EMP) data collection. C DCTs are planned and can be used at the local, regional, or national level.

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Data Collection Type	Description
Random Inspection (RI) (Ramp)	**What Does it Contain?** RIs are planned or unplanned ramp inspections. The objective of an RI is to observe and evaluate the routine methods and procedures used by a certificate holder's personnel during the period immediately before or after a flight to determine compliance with regulations and safe operating practices. **What Are the Responses?** There are three response options: No Discrepancies. If you select this option, it means you did not observe any discrepancies and are not required to enter comments in the DCT. Discrepancies: Regulatory Compliance. If you select this option, it means you observed a discrepancy that is considered regulatory noncompliance. You must notify the PI. Information concerning the discrepancy is entered in the "Observables" section of the DCT. Discrepancies: Non-Regulatory Compliance. If you select this option, it means you observed an item that is not contrary to the regulations. You must notify the PI. Information on the discrepancy is entered in the "Observables" section of the DCT.
En Route Inspection	**What Does it Contain?** En Route inspections are planned or unplanned cockpit or cabin En Route inspections. The objective of an En Route inspection is to observe and evaluate the in-flight operations of the certificate holder within the total operational environment of the air transportation system. This includes assessment of elements both internal (e.g., crewmembers and flight conduct) and external (e.g., airport/heliport and air traffic control (ATC)/airspace to a specific certificate holder). **What Are the Responses?** There are three response options: No Discrepancies. If you select this option, it means you did not observe any discrepancies and are not required to enter comments in the En Route DCT. Discrepancies: Regulatory Compliance. If you select this option, it means you observed a discrepancy that is considered regulatory noncompliance. You must notify the PI. Information concerning the discrepancy is entered in the "Observables" section of the En Route DCT. Discrepancies: Non-Regulatory Compliance. If you select this option, it means you observed an item that is not contrary to the regulations. Information on the discrepancy is entered in the "Observables" section of the En Route DCT.
Dynamic Observation Report (DOR)	**What Does it Contain?** 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. Use the DOR in the following situations: • Safety issues unrelated to the DCT under assessment; • Safety issues for which there is not an applicable DCT question; • Safety issues for a certificate holder or applicant to which you are not assigned; or • Local, regional, or national inspection events as directed.

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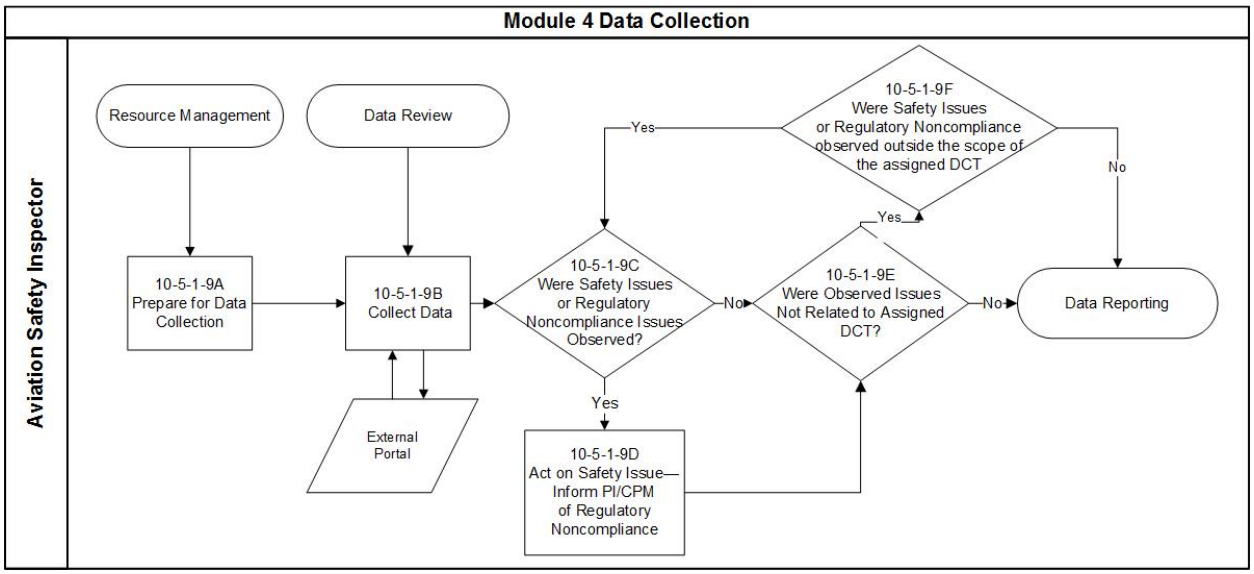
Table 10-5-1B. Types of Responses

Favorable	A “favorable” response means that the ASI observed conditions that met the criteria specified by that DCT. Only the first response listed in the DCT answer set is favorable. A “no” response can be considered a favorable response.
Unfavorable	An “unfavorable” response means that the ASI observed conditions that did not meet the criteria specified by the DCT. Any response not listed first in the DCT answer set is considered unfavorable. A “yes” response can be considered an unfavorable response.
Not Observable	A “not observable” response means that the ASI was not able to observe the situation described by a particular question at the certificate holder’s or applicant’s place of operation.
Not Applicable	A “not applicable” response is used when a question does not apply to that certificate holder or applicant. Choosing this option is appropriate only for questions that are not applicable due to the type of operation authorized for the certificate holder or applicant.

10-5-1-7 DATA COLLECTION.

Figure 10-5-1A. Module 4 Performance Assessment Data Collection Process Flowchart



10-5-1-9 PROCEDURES.

A. Prepare for Data Collection (see flowchart process step 10-5-1-9A). The first step in the data collection process is for the ASIs to prepare for data collection. The following items are required to be reviewed prior to starting data collection:

1) Individual Work Plan (IWP). The IWP is a single point of entry for users to view and access DCT work assignments and other functions.

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2) Pre-Inspection Checklist. Prepare for data collection by reviewing the Pre-Inspection Checklist items. When the review is complete, the ASI must select, "I have performed all the items on the Pre-Inspection Checklist and I am now ready to perform the data collection," to move to the next step, 10-5-1-9B, Collect Data. The Pre-Inspection Checklist contains the following items:

a) Review and ensure you understand the PI or CPM instructions.

b) Review and ensure you understand the DCT questions.

c) Review and ensure you understand the purpose and objective statements.

d) Review the SRRs.

e) Review FAA guidance.

f) Review the certificate holder's or applicant's operations specifications (OpSpecs), training programs, manuals, policies, procedures, and instructions.

g) Review the results of previous DAs and PAs.

h) If conducting a team DA, the team coordinator (TC) should check that each team member has performed each item on the Pre-Inspection Checklist. When the TC confirms that each inspector completes the checklist, the TC checks the box and answers, on behalf of the team, that everyone prepared for the inspection.

NOTE: The ASI must ensure that he or she has a thorough understanding of applicable items on the checklist prior to beginning data collection activities.

3) Related DCTs. Related DCTs are the other DCTs related to that system, subsystem, or element.

B. Collect Data (see flowchart process step 10-5-1-9B).

1) Data Collection. ASIs collect data to ensure that the certificate holder's or applicant's system complies with the intent of the regulations and safety standards. The "DCT-to-Go" option provides the ASI with the scoped DCT questions that can be printed out or viewed in a PDF or Word format. The certificate holder or applicant may access the DCTs through the Flight Standards Information Management System (FSIMS). Complete the DCTs within the timeframes specified by the PI/CPM.

2) Element Design Data Collection Tools (ED DCT) Conducted in Partnership with the Certificate Holder. Certificate holders are encouraged to participate with the ASI to perform and complete an ED DCT. The certificate holder's personnel are considered participants of the ED DCT team.

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NOTE: If noncompliance is discovered during the data collection process and the certificate holder is proactive and willing to correct the issue, then the ASI must document the compliance action in accordance with Volume 14.

C. Were Safety Issues or Regulatory Noncompliance Issues Observed? (see flowchart process step 10-5-1-9C). If the ASI observes safety issues or regulatory noncompliance, then see step 10-5-1-9D, Act on Safety Issue—Inform PI/CPM of Regulatory Noncompliance. If the ASI does not observe safety issues or regulatory noncompliance, then see step 10-5-1-9E, Were Observed Issues Not Related to Assigned DCT.

D. Act on Safety Issue—Inform PI/CPM of Regulatory Noncompliance (see flowchart process step 10-5-1-9D).

1) Act on a Safety Issue. If the ASI observes a condition that could result in an accident, incident, or regulatory noncompliance:

a) Stop data collection and intervene by notifying the appropriate certificate holder's or applicant's personnel.

b) Inform the PI/CPM.

c) Follow the guidance specified in Volume 14, Chapter 1, Section 2, Compliance Action Decision Procedure.

d) The PI/CPM will document and track the progress of the safety issue in the Action Item Tracking Tool (AITT) (see Volume 10, Chapter 6, Section 2).

2) Inform the PI/CPM of Regulatory Noncompliance. If the ASI observes regulatory noncompliance that requires immediate action:

a) Notify the appropriate certificate holder's or applicant's personnel.

b) Inform the PI/CPM.

c) Follow the guidance specified in Volume 14, Chapter 1, Section 2.

d) The PI/CPM will document and track the progress of the regulatory noncompliance in the AITT (see Volume 10, Chapter 6, Section 2).

E. Were Observed Issues Not Related to Assigned DCT? (see flowchart process step 10-5-1-9E). If the ASI observes issues not related to a DCT, then see step 10-5-1-9F, Were Safety Issues or Regulatory Noncompliance Observed Outside the Scope of the Assigned DCT. If the ASI observes any issues related to their assigned DCT, then report those issues in the DCT.

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F. Were Safety Issues or Regulatory Noncompliance Observed Outside the Scope of the Assigned DCT? (see flowchart process step 10-5-1-9F). If the ASI observes issues that are outside the scope of the assigned DCT, then the ASI creates a DOR. If the observed issue is a safety issue or is considered regulatory noncompliance, then see process step 10-5-1-9C. To initiate a DOR, select questions from the applicable element to report the observation. There may be situations where a question is not available. In that case, you would then select the "No Applicable Questions" checkbox.

10-5-1-11 through 10-5-1-29 RESERVED.

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VOLUME 10 SAFETY ASSURANCE SYSTEM POLICY AND PROCEDURES

CHAPTER 5 DATA COLLECTION, DATA REPORTING, AND DATA REVIEW

Section 2 Safety Assurance System: Module 4 Data Reporting

10-5-2-1 GENERAL.

A. Purpose. The data reporting process module defines the method for transferring data collected into the automation.

B. Scope. This section applies to aviation safety inspectors (ASI), aviation safety technicians (AST), aviation safety assistants (ASA), team coordinators (TC), and Data Quality Reviewers (DQR). In the data reporting module, ASIs, ASTs, ASAs, and TCs will:

- Enter data in accordance with data quality guidelines (DQG).
- Complete the Data Collection Tool (DCT).
- Submit the DCT.

10-5-2-3 RESERVED.

10-5-2-5 BACKGROUND. The Safety Assurance System (SAS) encompasses the certification, routine surveillance, and certificate management processes for certificate holders. It assesses the safety of Title 14 of the Code of Federal Regulations (14 CFR) parts 121, 135, and 145 certificate holder operating systems using system safety principles, Safety Attributes, risk management (RM), and structured system engineering practices. SAS also assesses the requirement to provide service at the highest level of safety in the public interest. SAS consists of five modules that highlight important features of how the Federal Aviation Administration (FAA) certificates and performs surveillance on certificate holders. Module 4, Data Collection, contains the processes for data collection, reporting, and review.

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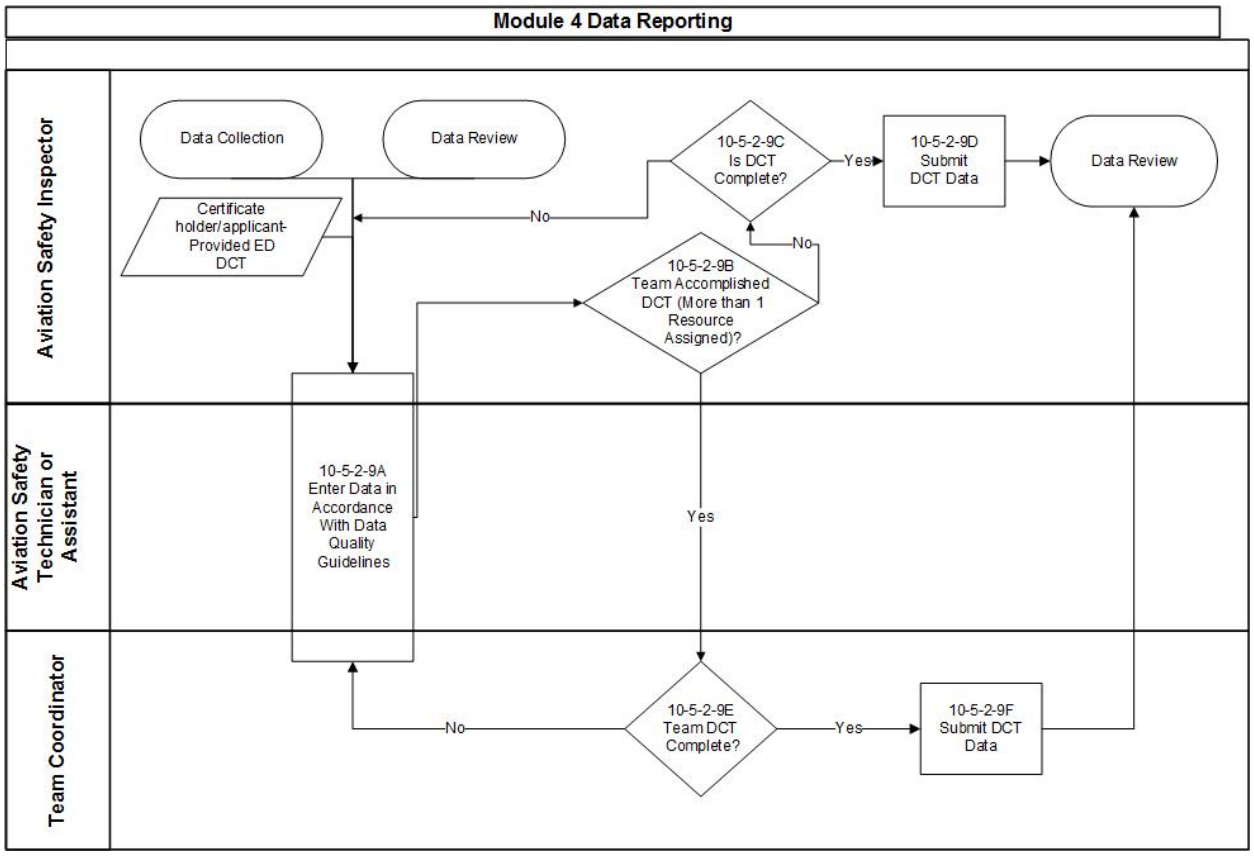
10-5-2-7 DATA REPORTING.

Figure 10-5-2A. Module 4 Data Reporting Process Flowchart



10-5-2-9 PROCEDURES.

A. Enter Data in Accordance with DQG (see flowchart process step 10-5-2-9A). The ASI, AST, or ASA records the DCT responses and Dynamic Observation Report (DOR) data into the automation in accordance with the DQG. The data should be entered within 5 business days of completing the data collection or as soon as possible. The ASIs, AST, and ASAs have the ability to record DCT data in the current quarter even if scheduled for a future quarter.

1) Entering Common Data Fields. The common data fields are customized based on the type of DCT and CFR part. Refer to the SAS Automation User Guide (AUG) for more information on how to enter data into the common data fields.

2) Data Collection. The ASI must provide enough information for a thorough assessment by the principal inspector (PI) or certification project manager (CPM). Only record factual data, not interpretation or personal opinion. A PI/CPM may request additional data collection before, during, and after all data reporting for the DCTs.

3) Duplicating Questions for System/Subsystem Performance Data Collection Tool (SP DCT) or Element Performance Data Collection Tool (EP DCT). The ASI has the

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option to duplicate questions within the same DCT for multiple inspections. If duplicate questions are used, the ASI has the option to change the common data fields. Respond to the Management Responsibility and Authority questions only once.

4) Add Related Element Level Questions. When conducting an SP DCT, ASIs can view the related EP DCT using the "Related Element Questions" link. If the ASI determines that additional information is needed to answer or validate an answer for an SP DCT question, the ASI selects the "add EP DCT" option and that EP DCT is added to the ASI's Individual Work Plan (IWP). Not all the EP DCT questions have to be answered: only the ones the ASI determines are necessary.

5) Off Hour. Select this field when off-hour surveillance is conducted. Off-hour surveillance is defined as activities that occur outside of normal FAA duty hours, including weekends.

6) PI Alert. The PI alert is a tool used by the ASI to request a PI review. The ASI must enter a comment in the "Comment" box to explain the reason for the alert. A PI alert notification is sent to the PI when a DCT contains at least one PI alert. The notification appears under the "Data Review" category on the notifications tile in SAS automation.

7) Add Action. This feature is only available to the PI/CPM. The action choices are located in Volume 10, Chapter 6, Section 2.

8) DORs. 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 14 CFR part 121, 135, or 145 certificate holders.

9) ASI Action Taken Field. If an inspector action was taken, then include that information in this field. The actions include, but are not limited to: consulting with certificate holder or applicant personnel to effect an action; notifying the PI or CPM of findings or concerns; or notifying the appropriate certificate holder or applicant personnel of a potential noncompliance. Follow the Volume 14 decision process when determining the appropriate course of action.

10) Response Details. If an unfavorable response is selected, then select one or more potential problem areas from the "Response Details" drop-down menu of standard responses. If the available choices do not adequately describe your observation, select "Other" and provide an explanation in the "Supporting Comment" field. See Table 10-5-2A, Data Collection Tool Response Details, for the Response Details for DCT type and response type.

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Table 10-5-2A. Data Collection Tool Response Details

DCT Response Details for Unfavorable Responses	DCT Response Details for Not Applicable (N/A) Due to	DCT Response Details for Not Observable (N/O)
• Unclear procedure(s). • Conflicting procedure(s). • Used workaround(s). • Personnel failed to follow process. • Procedures/guidance not available. • Procedures/guidance not current. • Inconsistent procedure(s). • Undocumented procedure(s). • Minor typographical error(s). • Information missing. • Communication failure(s). • Personnel failed to perform task. • Process failed to meet desired outcome. • Process oversight failure. • Equipment tools not available/appropriate. • Facilities not appropriate. • Other.	• Operator not authorized by OpSpecs. • Equipment not equipped/authorized. • Not applicable due to exemption, deviation, or exception. • Not authorized by regulation. • Not authorized by order. • Not authorized by notice. • Not authorized/recommended by advisory circular. • Not authorized by policy letter, legal interpretation, or other guidance. • Other.	• As directed by the principal inspector (PI) in the PI instructions. • Personnel (i.e., key certificate holder personnel not present/available). • Equipment (e.g., equipment not present/available/in serviceable condition). • Event did not occur (e.g., did not observe a drunk passenger on the flight). • Time constraints (e.g., resources/workload). • Weather (i.e., weather needed for observation not present or weather made observation impossible). • Other.

11) Corrected on the Spot. The ASI may request that the certificate holder or applicant correct an issue on the spot. The ASI uses the "Corrected on the Spot" checkbox and documents the corrective action taken in the "Inspector Action Taken" field. The ASI will refer to Volume 14.

12) Recording Responses to Questions Unfavorable or Favorable. Explanations must be complete and descriptive so that anyone knowledgeable within the industry can understand the comment without requiring additional information. Read the question thoroughly and answer it based on the performed activity. Unfavorable responses require an explanation of the "who, what, where, and when" that caused the response. Unfavorable responses may indicate Safety Attributes did not achieve the desired outcome. For example, procedures were not followed or checklist steps may have been skipped, this outcome could indicate potential risk in the certificate holder/applicant systems. Unfavorable responses provide valuable data to the PI/CPM that when analyzed with other data, may lead to increased oversight, even though the certificate holder or applicant did not violate any regulations.

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NOTE: A single unfavorable answer does not necessarily mean an unsafe condition or a regulatory violation has occurred, unless that question has a regulatory basis.

a) SP DCTs. For unfavorable responses, use the "Supporting Comment" field to provide a description on why the question was answered with an unfavorable response. Include in your comments the answers to the following questions: What was the requirement? Where did you look? What did you find? Select a category from the "Response Details" drop-down menu that best describes the unfavorable response. The ASI has the option to upload documents. When a system Safety Attribute question has an unfavorable response (e.g., a controls question for System 6.0, Ground and Station Operations), you must record the appropriate element in the "Supporting Comment" field. For example, "6.2.1 Deicing controls were ineffective…"

b) EP DCTs. For unfavorable responses, use the "Supporting Comment" field to provide a description on why the question was answered with an unfavorable response. Include in your comments the answers to the following questions: What was the requirement? Where did you look? What did you find? Select a category from the "Response Details" drop-down menu that best describes the unfavorable response. The ASI has the option to upload documents.

13) Entering Data Provided by the Certificate Holder or Applicant. Data collected by the certificate holder or applicant must meet the following requirements:

a) For initial certification, the applicant must fill out the required Element Design Data Collection Tools (ED DCT) using the external portal and Module 4.

b) For change requests, the certificate holder can voluntarily complete the appropriate ED DCTs as a self-audit.

c) Once the ED DCT is complete, accurate, and adheres to the data requirements, the PI/CPM submits the DCT. Once the DCT is submitted, the ASI assigned to that element is able to view the certificate holder's or applicant's responses to that question.

14) Performance Tracking and Reporting Subsystem (PTRS) Code Usage. Surveillance activities are captured in SAS. Certificate management activities required by this order may be captured in the PTRS. Compliance actions and enforcement actions require both SAS and PTRS entries in accordance with this order.

15) Using an ED DCT or Custom Data Collection Tool (C DCT) Instead of PTRS. PIs/ASIs may choose to record certificate management functions using an ED DCT or C DCT instead of the PTRS. For manual revisions, PIs may choose to record the revision review in the PTRS. If the manual revision impacts an approved or accepted program, then the PI may want to select an ED or C DCT to record the revision.

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16) Recording the FAA Form 8430-13, Request for Access to Aircraft. If conducting an SP DCT, EP DCT, or C DCT that requires an En Route, then record the FAA Form 8430-13 number in the SP DCT, EP DCT, or C DCT. For all other travel, record the FAA Form 8430-13 number in the Cockpit or Cabin En Route Inspection. Never record the same FAA Form 8430-13 in both SAS and the PTRS. See Volume 6, Chapter 2, Section 9 for more information.

17) DQG. See Volume 10, Chapter 5, Section 3 for the DQG.

B. Team Accomplished DCT (More Than One Resource Assigned)? (see flowchart process step 10-5-2-9B). If the Frontline Manager (FLM) assigned a team to accomplish the DCT, see step 10-5-2-9E, Team DCT Complete. If the FLM did not assign a team to accomplish DCT, see step 10-5-2-9C, Is DCT Complete.

C. Is DCT Complete? (see flowchart process step 10-5-2-9C). The ASI is the first level for assuring data quality. Validation of data includes the use of spell check in the common data field to help to minimize data entry errors. Upload supporting documents and ensure each DCT answer includes common data fields, start date, end date, and location. Review all DCT reports to ensure the PI/CPM instructions were followed.

D. Submit DCT Data (see flowchart process step 10-5-2-9D). Once the ASI determines that the DCT is complete, accurate, and adheres to the DQG, then the ASI submits the DCT. The data should be entered within 5 business days of completing the data collection, or as soon as possible. The DCT must be submitted by the due date, or per PI instructions. Once the DCT has been submitted and the DQR has started the review of the DCT, it cannot be changed unless the DCT is returned by the DQR.

E. Team DCT Complete? (see flowchart process step 10-5-2-9E). During the DCT reporting process, the TC reviews the DCTs and/or questions that the team members completed. The TC verifies that the DCTs are ready to be submitted by ensuring the team members:

- Uploaded supporting documents,
- Followed PI or CPM instructions, and
- Populated all required common data fields so that he or she can submit a complete assessment.

F. Submit DCT Data (see flowchart process step 10-5-2-9F). Once the TC determines that the DCT is complete, accurate, and adheres to the DQG, the TC submits the DCT. The TC submits data within 5 business days of completing the DCT, or as soon as possible. Once the DCT has been submitted and the DQR has started the review of the DCT, it cannot be changed unless the DCT is returned by the DQR.

10-5-2-11 through 10-5-2-29 RESERVED.

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VOLUME 10 SAFETY ASSURANCE SYSTEM POLICY AND PROCEDURES

CHAPTER 5 DATA COLLECTION, DATA REPORTING, AND DATA REVIEW

Section 3 Safety Assurance System: Module 4 Data Review

10-5-3-1 GENERAL.

A. Purpose. The data review process ensures quality data is entered into the Safety Assurance System (SAS) automation for the analysis and assessment of certificate holders or applicants.

B. Scope. This section applies to Office Managers (OM), Frontline Managers (FLM), Data Quality Reviewers (DQR), and aviation safety inspectors (ASI).

C. Module 4. In the Data Review Module, the DQR/FLM will:

- Review the Data Collection Tool (DCT).
- Determine whether data collection and data reporting meet requirements.
- Submit the DCT.
- Return and provide feedback on data.
- Determine if there is agreement.
- Determine if there are data collection issues.

10-5-3-3 RESERVED.

10-5-3-5 BACKGROUND. SAS encompasses the certification, routine surveillance, and certificate management processes for certificate holders. It assesses the safety of Title 14 of the Code of Federal Regulations (14 CFR) parts 121, 135, and 145 certificate holder operating systems using system safety principles, Safety Attributes, risk management (RM), and structured system engineering practices. SAS also assesses the requirement to provide service at the highest level of safety in the public interest. Module 4, Data Collection, contains the processes for data review.

A. Data. Data are a set of facts that represent real world objects that, when compiled, provide information for decisionmaking. Data that conform to a defined specification that correctly reflects the intended use produce quality data.

B. Need for Quality Data. Quality data provide a reliable measurement for the principal inspector (PI)/certification project manager (CPM) to assess the design and performance of a certificate holder's or applicant's system. Poor-quality data are incoherent and do not reflect real world conditions. Even accurate data that are redundant or not interpretable by the user are of little value. Deficient data is mostly unusable. Poor-quality data can impact operational cost, cause difficulty in setting and executing strategy, and create less effective decisionmaking.

C. Measuring Quality Data. Commonly used characteristics or dimensions to measure data quality include accuracy, appropriate amount of data, completeness, consistency, ease of understanding, objectivity, relevance, timeliness, and validity. SAS automation contains most of

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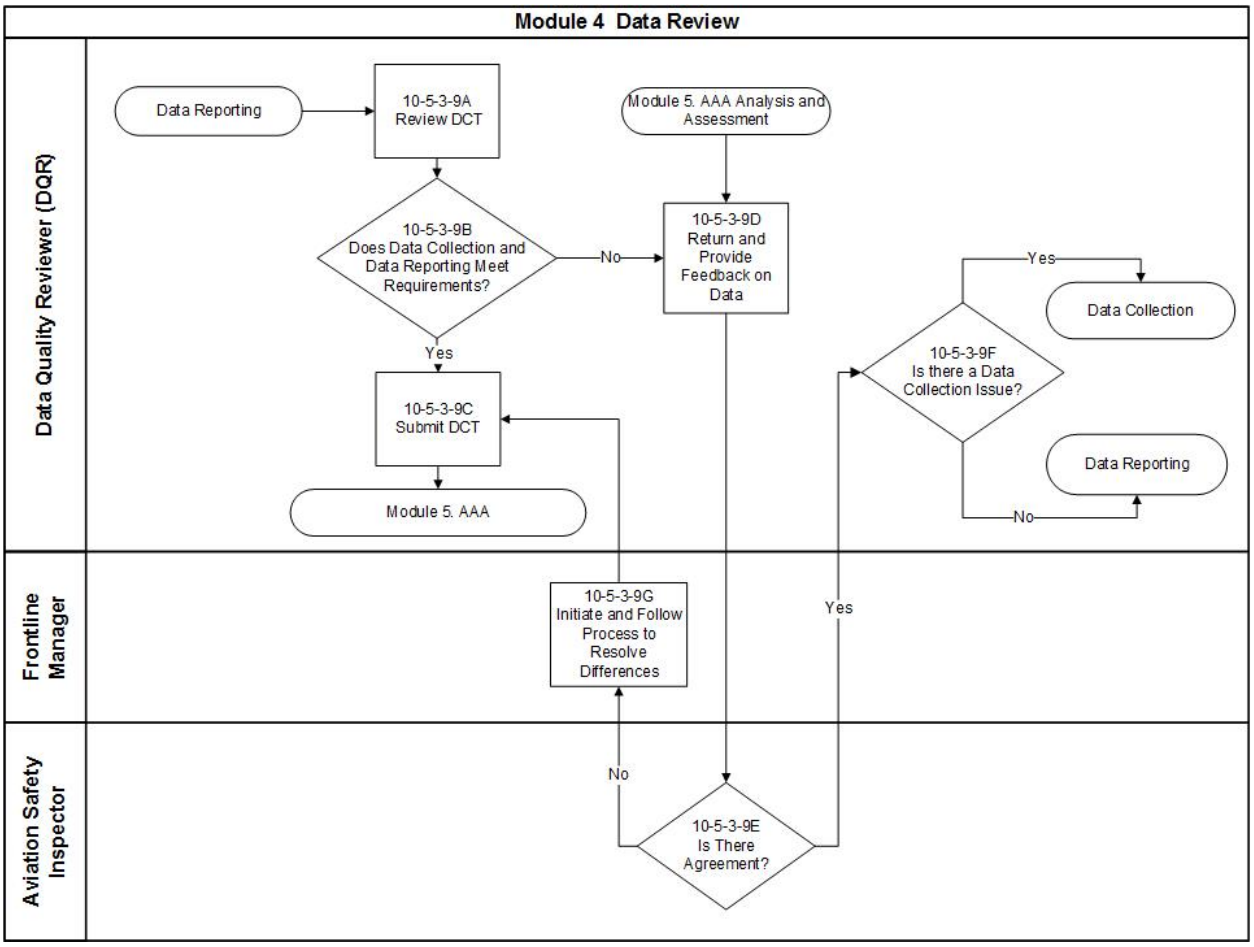
the controls to ensure data quality. However, ASIs play an important role by incorporating data quality guidelines (DQG) when they report data. Before submitting a DCT for data quality review, ASIs should review the data to reduce the possibility of the DCT being returned for corrections.

10-5-3-7 DATA REVIEW.

Figure 10-5-3A. Module 4 Data Review Process Flowchart



10-5-3-9 PROCEDURES.

A. Review DCT (see flowchart process step 10-5-3-9A). The "Review DCT" process consists of four steps:

1) The first step is conducted when the ASI reviews his or her responses and compares to the DQG.

2) The second step is conducted when the ASI selects "Check DCT."

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a) The "Check DCT" function validates the following items:

- Missing required fields both in questions and common data fields;
- Unanswered questions;
- Flagged questions by the user; and
- Spelling errors both in questions and common data fields.

b) During this step, the automation will require the ASI to correct all the errors before being able to submit the DCT with the following exceptions:

- The automation will indicate to the user which words are misspelled. This will allow the ASI to correct spelling errors.
- The ASI will not have to complete all the questions in an Element Performance Data Collection Tool (EP DCT) that was added as part of reporting data for a System/Subsystem Performance Data Collection Tool (SP DCT).

c) For team Element Design Data Collection Tools (ED DCT), the team member is able to check/review only those questions that they have answered. The team coordinator (TC) sees all the questions and is informed of any questions that were unanswered. Only the TC is able to submit the ED DCT.

3) The DQR conducts the third step. Once the automation notifies the DQR that there are items ready to review, it is at the discretion of the DQR to determine how many DCTs he or she reviews. Not all the DCTs require DQR review. A "Y" in the text column indicates that there are supporting comments to review and/or there is an attachment to review. Once the DCT has been submitted and the DQR has started the review, the ASI will not be able to make any changes to that DCT unless the DQR returns the DCT to the ASI. The DQR should conduct the review within 7 calendar-days of submission. The following are some of the items the DQR should review and consider:

a) Use the DQG table as a reference when reviewing responses, comments, and attachments (see Table 10-5-3A, Data Quality Guidelines).

b) Review PI instructions on the Prepare DCT tab to ensure the ASI followed instructions.

c) A "not observable" (N/O) response can be used throughout the DCT to include duplicate questions. It is no longer a requirement to use an N/O for the last activity since SAS automation does not track activities.

d) For specific questions that do not meet the DQG, the DQR should place a comment specific to that question and use the DQG reference (i.e., accuracy, value-added, etc.), as appropriate.

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e) When you (the DQR) return the DCT to the ASI, make sure to include the specific question(s) and any other relevant information so the ASI will know what he or she needs to review/revise. The ASI will receive a notification on their Individual Work Plan (IWP) when a DCT is returned.

4) The PI/CPM conducts the final data quality review during the Analysis, Assessment, and Action (AAA) process.

B. Does Data Collection and Data Reporting Meet Requirements? (see flowchart process step 10-5-3-9B). If the DCT meets the DQG, then see step 10-5-3-9C, Submit DCT. If the DCT does not meet the DQG, then see step 10-5-3-9D, Return and Provide Feedback on Data. (See Table 10-5-3A.)

C. Submit DCT (see flowchart process step 10-5-3-9C). The DQR submits the data to AAA when the data meets the DQG.

D. Return and Provide Feedback on Data (see flowchart process step 10-5-3-9D). If the DCT needs to be returned to the ASI, then the DQR records the reason why the DCT was returned (see step 10-5-3-9F, Is There a Data Collection Issue?). If, during the AAA, the PI or CPM finds data issues or needs more information, then record the reason why the DCT was returned.

E. Is There Agreement? (see flowchart process step 10-5-3-9E). The ASI evaluates the returned DCT and the reasons why it was returned. If the ASI agrees with the reasons why the DCT was returned, then he or she decides on the appropriate action (e.g., editing the record and conducting additional observations). If the ASI disagrees with the reasons why the DCT was returned, then see step 10-5-3-9G, Initiate and Follow Process to Resolve Differences.

F. Is There a Data Collection Issue? (see flowchart process step 10-5-3-9F). If there are data collection (quantity) issues (e.g., not enough data collected), then the DCT is returned to the ASI in Data Collection to collect additional data. If there are data reporting (quality) issues (e.g., not per DQG), then the DCT is returned to the ASI in Data Reporting to resolve these data quality issues.

G. Initiate and Follow Process to Resolve Differences (see flowchart process step 10-5-3-9G). If the ASI disagrees with the DQR and/or the PI/CPM, then the OM may delete or edit the data. When management deletes or edits an employee's data due to a professional difference of opinion, they will annotate in the supporting comments who made the change, when the change was made, and why. The OM must notify the ASI of any changes made to the original record. If the issue is resolved, then see step 10-5-3-9C, Submit DCT.

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Table 10-5-3A. Data Quality Guidelines

Data Quality Guidelines (DQG)		
DQG	**Definition**	**Measurement Examples**
Is the information accurate?	Data must be technically correct, understandable, and error free.	All explanations and comments must be in complete sentences and spelled correctly. Include Code of Federal Regulations (CFR) and other references, where appropriate.
Is there enough data to respond to the question?	Principal inspectors (PI)/certification project managers (CPM) may recommend a minimum number, location, and scope of inspection activities. The number of activities required to properly assess a given system/subsystem or element may vary considerably. There should be sufficient data to answer all the questions and to provide a thorough assessment by the PI/CPM. The inspections should vary across time and location to obtain sufficient amounts of quality observations to reflect the performance of the system/subsystem or element.	Ensure there is enough data to answer all questions. This may vary depending on the complexity and the size of the certificate holder and other factors. The aviation safety inspector (ASI) must follow the PI's instructions.
Do you understand the data?	Data must be clear and comprehensible.	Write explanations and comments in clear, concise language. Only use commonly understood abbreviations or acronyms. Explanations and comments must be complete and descriptive so that someone knowledgeable within the aviation industry can understand.
Is the data objective?	Data must be unbiased.	Explanations must be statements of fact or fact-based conclusions from actual observations.

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Data Quality Guidelines (DQG)		
Is the data relevant?	The data should be applicable to the observation or question.	The response, explanation, or comment should directly relate to the specific questions asked and the response for that question. The methodology used to collect the data was appropriate. Explanations and comments should not include administrative information (e.g., “James Doe completed initial operating experience satisfactorily”).
Is the data timely?	The age of the data must be appropriate for the task. Do not leave open the record as a means to collect information that may present itself in the future.	Enter your responses within 5 business days of completing the data collection or as soon as possible. Complete Data Collection Tools (DCT) within the timeframes the PI or CPM specified.
Does the data add value?	Data should be beneficial and provide advantages from its use.	Do not enter the word “None” as an explanation. Each explanation and comment must stand alone and not refer to the response for another question (e.g., “See above” or “Same as question 3”). ASIs should not enter a description of what they did to complete the particular inspection activity reported.

10-5-3-11 through 10-5-3-29 RESERVED.

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VOLUME 10 SAFETY ASSURANCE SYSTEM POLICY AND PROCEDURES

CHAPTER 7 RISK MANAGEMENT PROCESS AND SYSTEM ANALYSIS TEAM

Section 1 Safety Assurance System: Risk Management Process

10-7-1-1 GENERAL. Principal inspectors (PI) use the risk management process (RMP) to document, track and evaluate the status of existing hazards and their associated risks. This section describes the process to initiate an RMP. If a new hazard is identified, then PIs need to see Volume 10, Chapter 7, Section 2, which describes the process to initiate a new hazard and the role of the National Safety Analysis (NSA).

A. Purpose. This section describes the RMP-specific roles and the procedures to manage hazards and the associated risks.

B. Scope. In the RMP, the PI will:

- Identify a hazard.
- Determine if the hazard requires NSA support.
- Select action details.
- Select hazard details.
- Select RMP classification.
- Determine RMP classification.
- Determine if the RMP worked.
- Close the RMP.

10-7-1-3 RESERVED.

10-7-1-5 BACKGROUND.

A. Overview. Hazard identification is a key component of the Safety Assurance System (SAS). PIs can identify a safety problem within a certificate holder's systems throughout the SAS process. For example, PIs have the option of selecting an RMP action during the Certificate Holder Assessment Tool (CHAT), Data Collection, and Analysis, Assessment, and Action (AAA) (Action) process. The RMP is an interactive management activity dedicated to assuring that hazards are identified, documented, and eliminated or mitigated.

B. RMP Participants. The PI is the primary participant of the RMP and will determine when to use this process. When appropriate, the PI may include aviation safety inspectors (ASI), Operation Research Analysts (ORA), and Data Quality Reviewers (DQR) to assist with historical and statistical information.

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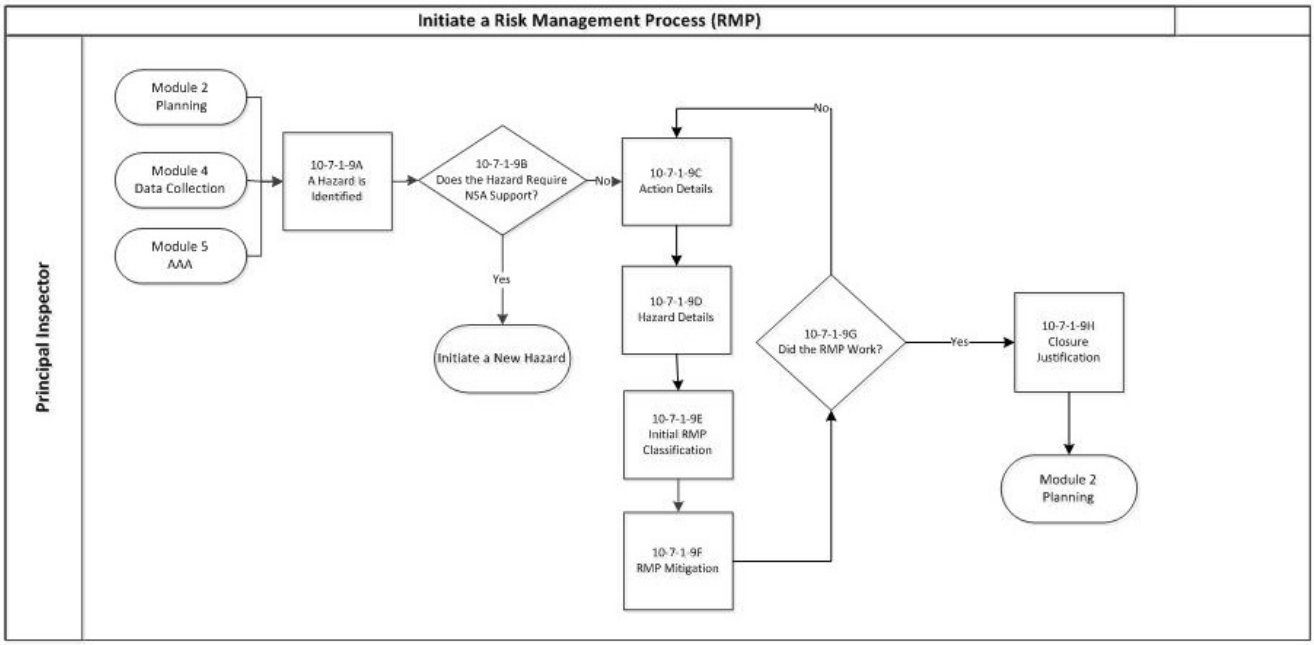
10-7-1-7 RMP FLOW.

Figure 10-7-1A. Initiate a Risk Management Process Flowchart



10-7-1-9 PROCEDURES.

A. A Hazard is Identified (see flowchart process step 10-7-1-9A). The PI may identify hazards in the CHAT, the Action part of the AAA, or Data Collection. There are two paths the PI can take when identifying a hazard: initiate an RMP or initiate a new hazard process. A hazard is defined as 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. 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 (e.g., something related to Automatic Dependent Surveillance–Broadcast (ADS-B), the new Boeing B-787 aircraft, or the Next Generation Air Transportation System (NextGen)). The RMP contains five sections: Action Details, Hazard Details, Initial RMP Classification, RMP Mitigation, and Closure Justification. For information on the Identify New Hazard process, see Volume 10, Chapter 7, Section 2.

B. Does the Hazard Require NSA Support? (see flowchart process step 10-7-1-9B).

IF	THEN
The PI identifies a hazard and there is enough information to assess the risk,	The PI initiates an RMP.
The PI identifies a hazard and there is not enough information to assess the risk,	The PI initiates the new hazard process. See Volume 10, Chapter 7, Section 2, for the new hazard process.

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C. Action Details (see flowchart process step 10-7-1-9C). This section is used to describe why this action is being taken. The default due date is the last day of the next quarter. If the due date is changed from the default due date, then add a reason in the "Due Date Change" comment box. Attach any supporting documentation as required.

NOTE: Although not required, the potential consequence field is important. It specifies the possible negative outcome(s) if nothing is done to mitigate the hazard. Select the potential negative consequence(s) from the list. It is helpful to enter additional descriptive information about the potential consequence in the text box.

D. Hazard Details (see flowchart process step 10-7-1-9D). This section is used to describe the hazard. This assists in risk analysis and provides targets for action plans. Enter the hazard title and description in the appropriate boxes. Complete the other fields, such as location and related make, model, and series (M/M/S). The point of contact (POC) field includes a drop-down list with the office personnel. The PI may request the Frontline Manager (FLM) to assign a POC to assist with the RMP. The POC assumes the PI's authority for accomplishing the RMP and can be assigned action items associated with the RMP. However, only the PI can open and close the RMP.

E. Initial RMP Classification (see flowchart process step 10-7-1-9E). Use this section to identify the risk factors. Select the risk factor type from the following options: Procedures, Control, Process Measures, Interfaces, Responsibility, Authority, Situation, Other, and Unknown. Enter a description of the risk factor in the description text box. Choose the appropriate severity and likelihood from the drop-down menus. The automation calculates the risk assessment based on values in the risk matrix table (see Table 10-7-1B, Risk Matrix Table).

F. RMP Mitigation (see flowchart process step 10-7-1-9F). Select the risk mitigation approach from the drop-down menu. The options are Mitigate, Monitor, and Transfer. Enter a justification in the text box. See Table 10-7-1A, Risk Management Process Mitigation Options, for a description of the mitigation options.

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Table 10-7-1A. Risk Management Process Mitigation Options

Mitigation Options	Description
Mitigate	An action plan that reduces the severity of risk consequences. For example, the action is within the scope of the Field Office's (FO) authority. Identify what the certificate holder must control in order to reduce the level of risk. These factors then become specific targets for risk control to eliminate or reduce the negative effects. Determine known risk factors associated with the severity of the consequences and the likelihood of occurrence. Risk factors are typically situational factors, for example: • Operating conditions that promote corrosion; • Aging aircraft or high-cycle use of aircraft; or • Deficiencies in design or performance related to safety attributes (e.g., missing attributes or failure to adhere to procedures).
Monitor	An action plan where risk may not need immediate mitigation. "Monitor" reduces the likelihood of risk consequences.
Transfer	An action plan that transfers risk from one organization to another. For example, if the action is outside of the FO's authority, then determine the appropriate Federal Aviation Administration (FAA) organization that has the authority, responsibility, and accountability to take corrective action for the identified hazard. Use this approach to address risks that may require actions such as rule changes, new or revised Airworthiness Directives (AD), policy changes, and safety recommendations. Once the action plan has been transferred, the RMP can be closed. You may follow up on the status of transferred items.

G. Did the RMP Work? (see flowchart process step 10-7-1-9G). If the PI determines the action items are complete, or data indicates that the action plan has eliminated the hazard or reduced the associated risk to acceptable levels, then the PI validates the effectiveness of the action plan. The PI validates the effectiveness of the approach by reviewing the hazard and verifying the certificate holder has eliminated the hazard or mitigated risk to an acceptable level. After evaluating the results of the action plan, the PI decides whether to close the RMP or add action items. If the PI decides to add additional action items and not close the RMP, then see step 10-7-1-9C, Action Details. If the PI determines the action plan works, then see step 10-7-1-9H, Closure Justification. Use the following information as a guide to evaluate the effectiveness of the action plan:

1) Evaluate the status of the hazard by verifying that the certificate holder addressed the risk factors that contributed to or caused the hazard to occur.

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2) Verify the certificate holder reduced the level of risk posed by the hazard.

3) Determine if the action plan addressed each risk factor. Describe changes in the risk factors based on the action taken.

H. Closure Justification (see flowchart process step 10-7-1-9H). After the PI has determined the certificate holder has addressed the risk factors and reviewed the hazard and its consequence descriptions, the PI revises the severity and likelihood values. The PI uses the risk matrix to determine if the overall level of risk is affected. Choose the new severity and likelihood values from the drop-down menu. If the level of risk is acceptable, the PI closes the RMP. If the level of risk is unacceptable, then the PI revises the hazard description and associated details to determine what additional actions are necessary.

Table 10-7-1B. Risk Matrix Table

Risk Matrix			
Likelihood	**Severity**		
	High	**Medium**	**Low**
Frequent	**12**	**10**	**8**
Probable	**11**	**7**	**5**
Occasional	**9**	**4**	**2**
Remote	**6**	**3**	**1**
Overall Risk Assessment Legend: 12-10 (Red) High Overall Risk 9-4 (Yellow) Medium Overall Risk 3-1 (Green) Low Overall Risk			

10-7-1-11 through 10-7-1-29 RESERVED.

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VOLUME 10 SAFETY ASSURANCE SYSTEM POLICY AND PROCEDURES

CHAPTER 7 RISK MANAGEMENT PROCESS AND SYSTEM ANALYSIS TEAM

Section 3 Safety Assurance System: System Analysis Team

10-7-3-1 GENERAL.

A. Purpose. This section describes procedures and specific roles for the System Analysis Team (SAT) to determine the root cause of systemic problems.

B. Scope. In the SAT, the principal inspector (PI) will:

- Determine if there is a systemic hazard.
- Determine if a SAT is required.
- Convene the SAT.
- Determine if a risk management process (RMP) is required.
- Initiate an RMP.

10-7-3-3 RESERVED.

10-7-3-5 BACKGROUND. The SAT is used to develop action plans to ensure certificate holders manage their risks. Work together with our personnel (the Federal Aviation Administration (FAA)), the certificate holder, and other non-FAA entities to determine root causes and recommend solutions. The SAT process encourages SAT participants to provide feedback on any actions taken as part of the information sharing process.

10-7-3-7 SAT PROCESS.

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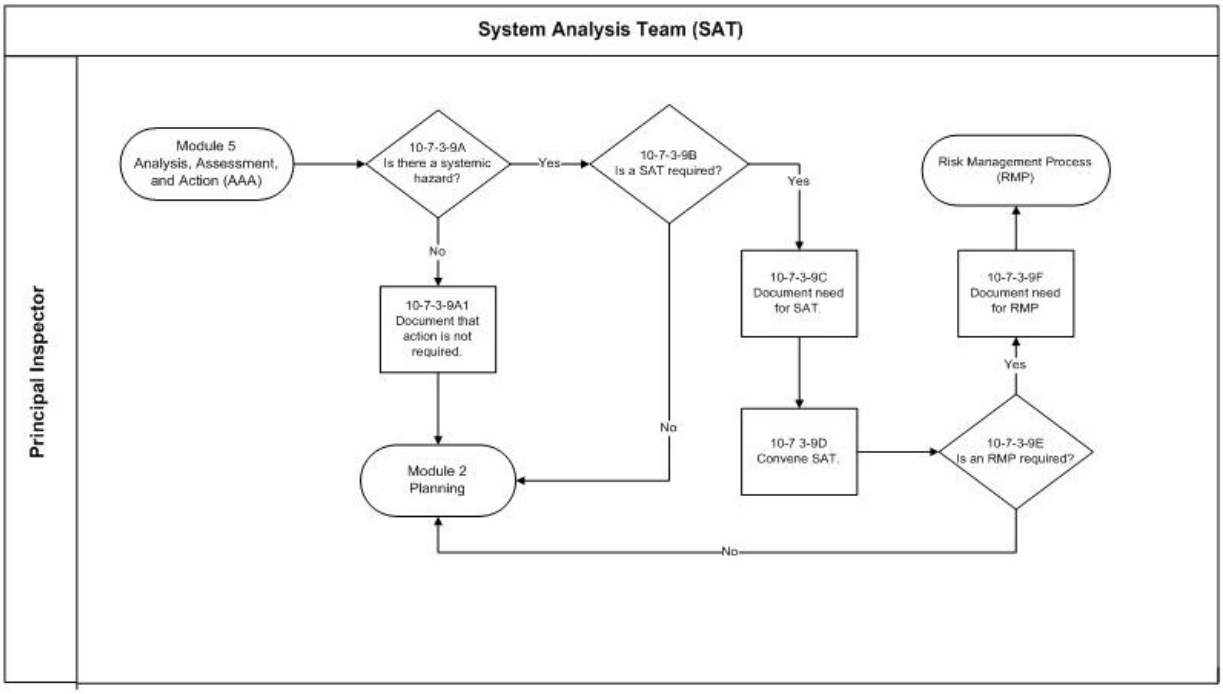
Figure 10-7-3A. System Analysis Team (SAT) Process Flowchart



10-7-3-9 PROCEDURES.

A. Is There a Systemic Hazard? (see flowchart process step 10-7-3-9A). Hazards are conditions, events, or circumstances that could lead or contribute to an unplanned or undesired outcome. (Some hazards are isolated incidents that typically attribute to performance and do not require system-level changes, but they may indicate systemic hazards.) Systemic hazards are those that indicate defects in the design of the certificate holder's processes (e.g., missing procedures, poor controls, or lack of attention to interfaces), patterns of repeated noncompliance with procedures, or significant changes in the operating environment. Controlling or eliminating systemic hazards requires modifications to the system design. If no systemic hazards are identified, see step 10-7-3-9A1, Document That Action Is Not Required, and document that action is not required in Analysis, Assessment, and Action (AAA). If there is a systemic hazard, see step 10-7-3-9B, Is a SAT Required.

B. Is a SAT Required? (see flowchart process step 10-7-3-9B). If a SAT is required, see step 10-7-3-9C, Document Need for SAT. When you become aware of a systemic hazard, determine if a SAT is beneficial. Form a SAT at your discretion when further analysis is required to determine the root cause of a systemic problem. The SAT may perform further analysis and determine the root cause with participants from the following:

- Field Office (FO);
- Certification Project Team (CPT);
- Other FAA personnel;

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- Airline and/or manufacturers' representatives; and
- Industry personnel.

NOTE: A common approach to a SAT is to work jointly with the certificate holder or industry to identify system deficiencies.

C. Document Need for SAT (see flowchart process step 10-7-3-9C). Use the SAT process to develop and execute collaborative action plans to ensure certificate holders manage its risks. Work together with our personnel, the certificate holder, and other non-FAA entities to determine root causes and recommend solutions. The SAT process provides feedback on any actions taken to applicable parties as part of the information sharing process.

NOTE: The SAT process does not change Flight Standards Service (AFS) enforcement policies. Conduct SATs in a manner that does not compromise our enforcement responsibilities (see Volume 14, Compliance and Enforcement, and refer to the current edition of FAA Order 2150.3, FAA Compliance and Enforcement Program).

D. Convene SAT (see flowchart process step 10-7-3-9D).

IF	THEN
You convene a SAT	Open an RMP to document the need to convene a SAT and to determine and document the next actions that are taken. Then request input from the certificate holder for SAT composition. Depending on the nature of the system problem, the SAT may include the following: • FO members, • Other FAA personnel, • Airline representatives, • Manufacturers' representatives, and • Other industry personnel. The certificate holder coordinates the participation with non-FAA participants, such as manufacturers' representatives or other industry personnel.
You require participation	Contact personnel from the certificate holder and the FAA to request their participation on the SAT. The certificate holder coordinates the participation with non-FAA participants such as manufacturers' representatives or other industry personnel. (See Figure 10-7-3B,

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IF	THEN
	Sample Letter Requesting Participation on a System Analysis Team.)
Your initial request for participation is not accepted	Send a written request for participation to the appropriate certificate holder management official.
Your request for participation is declined	Notify your regional division manager through your certificate-holding district office (CHDO)/certificate management office (CMO) manager. The regional division manager and the CHDO/CMO manager may choose to do one of the following: • Contact a higher level of management at the organization that declined; or • Continue the SAT without the initially identified participants.
You need to develop, implement, and validate the results of the SAT	Coordinate with other appropriate parties of the SAT to: • Determine the approach to use; • Develop RMP action items; • Coordinate performance of the action items; and • Determine if the RMP eliminates the hazard or reduced the risk level sufficiently so that no additional action is necessary.
The RMP is complete	Provide feedback to applicable parties. As part of the information sharing process, after the RMP is complete, communicate the results to all applicable parties.

E. Is an RMP Required? (see flowchart process step 10-7-3-9E). The RMP is the primary tool that develops, reports, and documents in the SAT process. If you determine a SAT is necessary, open an RMP to document the need for a SAT and to document the outcome or what actions were taken based upon the SAT. As you implement the RMP, FO members perform periodic process checks to monitor whether the action items are complete and effective. Once the action items are complete, the SAT verifies that the overall action plan either eliminates the hazard or reduces the level of risk so that no additional action is necessary. If no RMP is required, continue your normal planning during the planning cycle. If an additional RMP is required from the determination of the SAT outcome, see step 10-7-3-9F, Document Need for RMP.

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F. Document Need for RMP (see flowchart process step 10-7-3-9F). Determine if an RMP is required to address the hazard. Document the decision and provide an explanation. See Volume 10, Chapter 7, Section 1, for more information on the RMP.

10-7-3-11 JOB AIDS.

Figure 10-7-3B. Sample Letter Requesting Participation on a System Analysis Team

U.S. Department
of Transportation

Federal Aviation Administration

[Date]

[Address]

Dear [Appropriate Official],

As part of the FAA's Safety Assurance System (SAS) Implementation [action] process, the FAA may respond to an identified risk via several action plans. One is to convene a System Analysis Team (SAT) whose objective is a collaborative approach whereby the certificate holder, other non-FAA entities, and the FAA work together on significant safety matters to determine the root cause(s) and solutions.

The [Field Office (FO)] and [certificate holder] have agreed to convene a SAT to develop an action plan (see attachment) that will set milestone dates, assign the responsible company departments and personnel, and forecast completion dates with the focus on [describe the problem that the SAT was formed to address].

This meeting is scheduled for [date, time, and location]. FAA participation will include [names and titles of participants from the FAA].

Thank you for your cooperation and this opportunity to effect tangible improvements to safety.

Sincerely,

[Name and title of PI, CPM, or manager]

10-7-3-13 through 10-7-3-29 RESERVED.

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VOLUME 10 SAFETY ASSURANCE SYSTEM POLICY AND PROCEDURES

CHAPTER 8 CERTIFICATE HOLDER EVALUATION PROCESS

Section 1 Safety Assurance System: Certificate Holder Evaluation Process

10-8-1-1 GENERAL.

A. Purpose. The Certificate Holder Evaluation Process (CHEP) provides the Flight Standards Service (AFS) with standard policies and procedures to evaluate Title 14 of the Code of Federal Regulations (14 CFR) parts 121, 135, and 145 certificate holders. If you are the principal inspector (PI); Frontline Manager (FLM); CHEP aviation safety inspector (ASI); or national, regional, or local AFS manager, this section applies to you. When information is applicable to someone other than the positions listed, the procedures are specific. Evaluations are an extension of Element Performance Assessments (EPA), Element Design Assessments (EDA), and System/Subsystem Performance Assessments (SPA).

B. Scope. The CHEP is a process used at the national, regional, and office levels.

10-8-1-3 RESERVED.

10-8-1-5 BACKGROUND.

A. Objectives. The CHEP allows for an indepth look at the certificate holder's system and has three primary goals:

- Verify the certificate holder complies with applicable regulations;
- Evaluate whether the certificate holder is operating at the highest possible degree of safety in the public interest in accordance with Title 49 of the United States Code (49 U.S.C.) § 44702; and
- Identify hazards and mitigate associated risks.

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B. Certificate Holder's Participation.

IF	THEN
The evaluation is conducted at the national level by the Flight Standards National Field Office (FSNFO) (AFS-900)	Certificate holder personnel will not be participating members of the National CHEP.
The evaluation is not conducted at the national level by AFS-900	Certificate holder personnel may be participating members at the discretion of the manager responsible for the CHEP.
The certificate holder participates in the evaluation (joint evaluation)	• The CHEP Team Leader (TL) ensures the certificate holder's key management officials (as defined in 14 CFR part 119, § 119.65 or part 145, § 145.151) receive a briefing on the CHEP and the provisions of the current edition of Advisory Circular (AC) 00-58, Voluntary Disclosure Reporting Program, before beginning the evaluation. • AC 00-58 applies, as written, during the evaluation period. However, in the case of a joint evaluation, the certificate holder may apply AC 00-58 when the discovery of a possible violation is made by either party. • Certificate holder management must understand the requirement to use the appropriate Element Design Data Collection Tool (ED DCT) to assess and document the comprehensive fix of any element deficiencies discovered by the evaluation team that involves an apparent violation of FAA regulations.
The certificate holder does not participate in the evaluation, or the FAA decides not to include them (evaluations not conducted jointly)	The provisions and protections contained in AC 00-58 do not apply to apparent violations of FAA regulations discovered by the evaluation team during the specified evaluation period.

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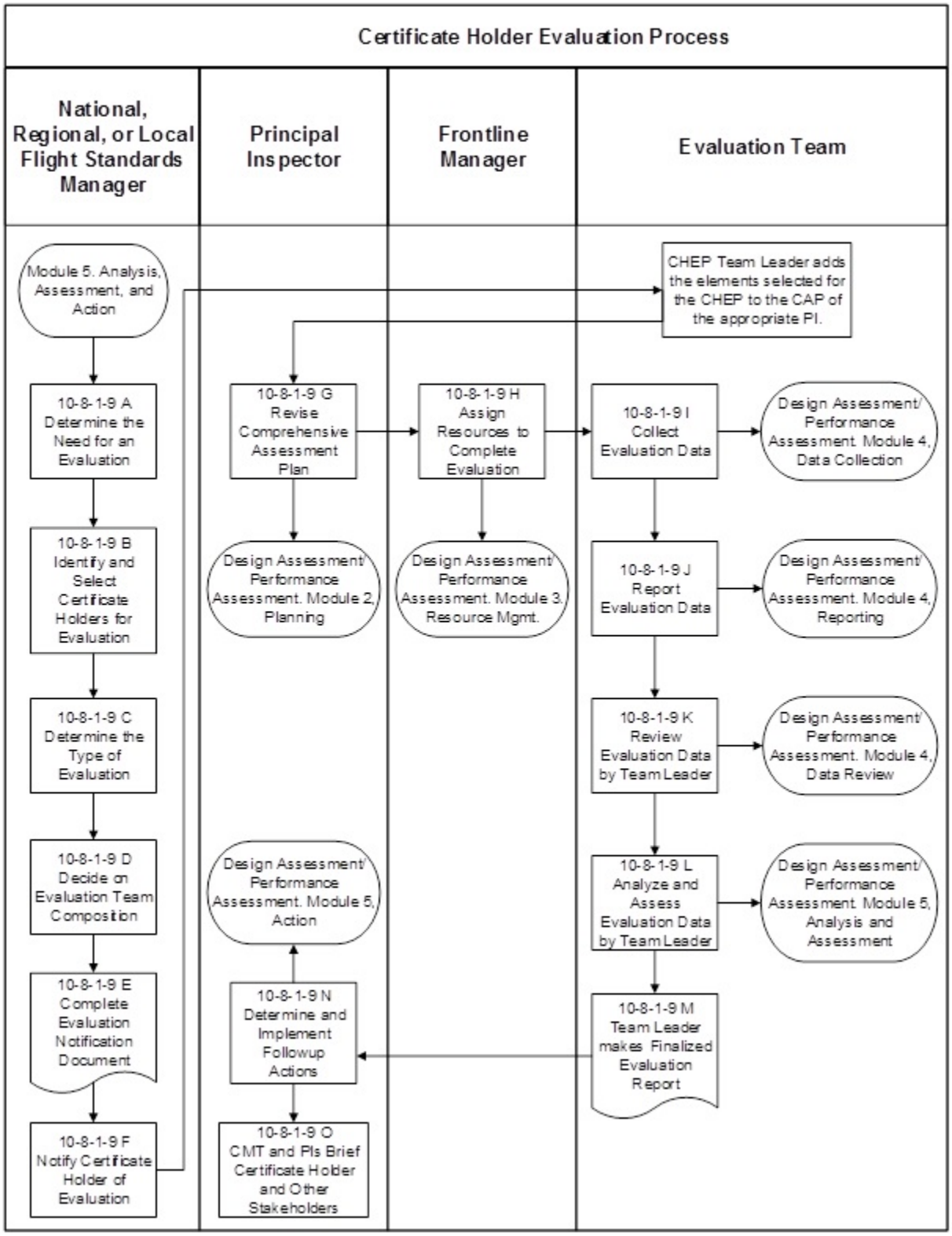
10-8-1-7 CHEP.

Figure 10-8-1A. Certificate Holder Evaluation Process Flowchart



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10-8-1-9 PROCEDURES.

A. Determine the Need for an Evaluation (see flowchart process step 10-8-1-9A). If you are the national, regional, or local AFS manager, then steps 10-8-1-9A through 10-8-1-9F apply to you. The following conditions may indicate the need to conduct an evaluation:

- Substantial change in certificate holder management;
- Substantial turnover in personnel or reduction in force (RIF);
- Labor dispute;
- Rapid expansion or growth;
- Merger, takeover, or change in ownership;
- Enforcement actions;
- Noncompliant attitude;
- Accidents/incidents/occurrences;
- Department of Defense (DOD) reviews;
- Department of Transportation (DOT)/Office of the Secretary of Transportation (OST) economic authority/insurance requirements;
- Change in fleet type;
- Substantial change in outsourcing;
- Financial distress;
- Substantial customer or employee complaints;
- Hotline complaints; and
- Certificate transfer (refer to part 119, § 119.63 regarding the status of operation/dormant certificates).

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B. Identify and Select Certificate Holders for Evaluation (see flowchart process step 10-8-1-9B). There are several ways to select a certificate holder for evaluation.

IF	THEN
At the national level	• AFS-900 or the Office of the Director (AFS-1) will review a variety of data sources to select a certificate holder for evaluation, including requests from AFS regional and certificate-holding district office (CHDO) managers. • Once a certificate holder is selected, the national manager responsible for the evaluation (or designee) will notify the regional division manager and request the region identify the regional coordinator and a CHDO point of contact (POC) for the evaluation. • The regional coordinator and CHDO POC are advised of the dates of the in-brief and out-brief and may attend either or both briefings.
At the regional level	• The AFS regional division manager responsible for the certificate holder's oversight may identify and select a certificate holder for evaluation. • The AFS regional division manager notifies the appropriate CHDO manager of the certificate holder selected for an evaluation. • AFS managers within a region may request a region-level evaluation.
At the office level	The CHDO manager responsible for the certificate holder oversight may identify and select the certificate holder for an office-level evaluation.

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C. Determine the Type of Evaluation (see flowchart process step 10-8-1-9C). The CHEP includes two types of evaluations.

IF	THEN
Conducting a focused evaluation	• Select elements/programs using System/Subsystem Performance Data Collection Tools (SP DCT), ED DCTs, Element Performance Data Collection Tools (EP DCT), or other tools as necessary. • There is a specified period for the evaluation. However, should the CHEP team determine that the evaluation should continue based on findings, the evaluation period may be extended as necessary.
Conducting a comprehensive evaluation	• Select the elements necessary to reissue operations specifications (OpSpecs) using SP DCTs, ED DCTs, EP DCTs, and other tools. • There is no specified period for the evaluation. • Refer to § 119.63 for dormant certificates.

NOTE: An Operations Research Analyst (ORA) can generate reports upon request of the manager.

D. Decide on Evaluation Team Composition (see flowchart process step 10-8-1-9D). The level and type of evaluation, along with the complexity of the certificate holder, will help determine the composition of the evaluation team. Evaluation teams may consist of national, regional, or local FAA personnel. In some cases, personnel from the certificate holder and other entities may be asked to participate.

TEAM COMPOSITION	ACTIONS
CHEP TL NOTE: AFS-900, the AFS regional division manager, or the CHDO manager, depending on the level of evaluation, designates the TL.	• Responsible for conducting the evaluation in accordance with the policies and procedures. • Guides the evaluation team members on a daily basis during the evaluation period. • Ensures team members receive a briefing on certificate-holder-specific information applicable to the scope of the evaluation. • Decides how the team communicates. • Ensures team members are briefed on the CHEP and the contents of the evaluation notification document. • Organizes team meeting(s) (face-to-face or by other means) as necessary to review the TL instructions in the Comprehensive

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TEAM COMPOSITION	ACTIONS
	Assessment Plan (CAP) and any other relevant information.
CHEP ASIs No CHEP ASI may be assigned to a CHEP if that person had responsibility for inspecting the operations/ratings of that certificate holder in the 5-year period preceding the date of the evaluation.	• May consist of AFS-900 personnel, local CHDO personnel, personnel from another CHDO, and/or regional or national specialists, depending upon the level and scope of the evaluation. • May include certificate holder personnel as participants (if not a national AFS-900 CHEP) at the discretion of the manager responsible for the CHEP.
PI	• Not assigned to perform data collection as part of the evaluation. (This prohibition includes other ASIs assigned to the certificate holder being evaluated.) • Must be available to provide clarification pertaining to such items as program approvals, authorizations, and exemptions that apply to assigned certificate holder.
Certificate holder personnel Joint evaluations (FAA and certificate holder) include certificate holder personnel as active participants.	• When invited by the FAA to participate during joint evaluations, have an active role in determining and resolving element evaluation issues. • Certificate holder personnel not participating as members of the CHEP team may serve as POCs for the certificate holder on particular elements or areas of expertise.

E. Complete Evaluation Notification Document (see flowchart process step 10-8-1-9E). AFS-900, the regional AFS division manager, or the CHDO manager, depending on the level of evaluation, must develop and send an evaluation notification document to the CHDO manager. This document will include the following:

- Level and type of evaluation;
- Elements to be evaluated;
- Performance Assessment (PA) or Design Assessment (DA);
- Evaluation period, including projected start and completion dates;
- Name and contact information of designated TL and assistant manager; and
- Certificate holder participation (if any).

F. Notify Certificate Holder of Evaluation (see flowchart process step 10-8-1-9F). The CHDO manager informs the certificate holder of the evaluation and provides a briefing on the process to certificate holder personnel. The certificate holder is briefed by the AFS-900 team for a National CHEP. The notification can be verbal; the CHDO manager follows up in writing.

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The CHDO manager sends the written notification at least 2 weeks before the evaluation begins. The notification contains information such as that found in the evaluation notification document.

G. Revise Comprehensive Assessment Plan (see flowchart process step 10-8-1-9G). The CHEP Team Leader (TL) will add the assessments that have been selected for the evaluation to the Airworthiness and Operations CAP. The CHEP assessments will appear as a triangle at the bottom of the appropriate CAP and do not affect the Certificate Management Team (CMT) CAP. The CMT will adjust their CAP accordingly, taking into account the assessments that are completed by the CHEP Team.

H. Assign Resources to Complete Evaluation (see flowchart process step 10-8-1-9H).

1) Prior to the start date of the evaluation period, AFS-900 FLM (for National CHEPs) or the appropriate Safety Assurance System (SAS) Administrator will add the evaluation team members to the CMT in the SAS automation.

2) The CHEP TL distributes tasks by system/subsystem, element, individual questions, or some combination to one or more team members, to allow the timely collection of accurate data.

3) The FLM assigns team members to data collection activities to support the evaluation after the team members receive a briefing from the CMT on the certificate holder operations appropriate to the scope of the evaluation.

NOTE: There is no concurrence for assessments supporting a CHEP.

I. Collect Evaluation Data (see flowchart process step 10-8-1-9I). Evaluation team members perform their assigned activities to collect data in accordance with the CAP and TL instructions.

J. Report Evaluation Data (see flowchart process step 10-8-1-9J). Team members enter their responses into the SAS automation in accordance with the data quality guidelines (DQG) after collecting evaluation data. Critical or time-sensitive information must be reported to the CHEP TL and the PI immediately. Any unsafe condition that would result in an accident, incident, or violation discovered during the evaluation should be handled based on the applicable guidance. Enter data collected by certificate holder personnel if they are part of the evaluation, and indicate the source in the SAS automation. You may also document any identified program strength(s) in the comment box of the applicable SP DCT, ED DCT, EP DCT, or Custom Data Collection Tool (C DCT) question, provided it is not proprietary information.

K. Review Evaluation Data by Team Leader (see flowchart process step 10-8-1-9K). The evaluation TL is typically the Data Quality Reviewer (DQR). In some instances, it may be necessary for the DQR to proxy the data review function to a team member other than the evaluation TL. DQR rights are granted to specific CHEP team members if necessary. If the DQR finds any critical or time-sensitive information during the review, he or she must notify the TL and PI immediately, unless the record indicates notification has already taken place.

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L. Analyze and Assess Evaluation Data by Team Leader (see flowchart process step 10-8-1-9L). After all data are collected, reported, and reviewed, the evaluation team completes the evaluation using the SAS Analysis, Assessment, and Action (AAA) procedures and tools (Module 5). The TL is responsible for completing the Assessment Determination, Module 5 of the AAA, considering input from the team. The PI completes the Action Determination section of the AAA and follows through with any actions required.

M. Team Leader Makes Finalized Evaluation Report (see flowchart process step 10-8-1-9M). Evaluation TLs generate an evaluation report when requested by AFS-1, the regional AFS division manager, or the CHDO manager. Upon the request of the FLM, the Regional Manager, or the CHDO Manager, the ORA assigned to the certificate holder should generate a report on the evaluation data collected.

N. Determine and Implement Followup Actions (see flowchart process step 10-8-1-9N). The PI determines and implements followup actions in response to PAs and DAs completed during the evaluation.

O. CMT and PIs Brief Certificate Holder and Other Stakeholders (see flowchart process step 10-8-1-9O). The manager responsible for initiating the evaluation determines who briefs the certificate holder or other stakeholders on the results of the evaluation.

NOTE: If the CHEP identifies an issue with a Data Collection Tool (DCT), policy, or automation, then use the feedback process to report that issue. When a CHEP identifies a possible improvement to a CHDO process, these suggestions can be tracked in the QMS. The CHDO should use their QMS process to improve its processes. SAS will store historical data on SAS evaluations performed, including information on systems, subsystems, and program elements assessed, for each certificate holder.

10-8-1-11 through 10-8-1-29 RESERVED.

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VOLUME 10 SAFETY ASSURANCE SYSTEM POLICY AND PROCEDURES

CHAPTER 9 AIRCRAFT CONFIGURATION CONTROL DOCUMENT

Section 1 Safety Assurance System: Aircraft Configuration Control Document

10-9-1-1 GENERAL.

A. Purpose. This section provides information and references for the evaluation of an aircraft configuration based on Title 14 of the Code of Federal Regulations (14 CFR) part 121 airworthiness requirements. If you are a participant in the evaluation of an aircraft configuration, then this section applies to you.

B. Scope. Participants in the evaluation of an aircraft configuration should follow this process to determine if an aircraft meets the airworthiness requirements. Record all findings in Safety Assurance System (SAS) automation tools. The Aircraft Configuration Control Document (ACCD) includes the following information:

- Guidance in the development of a certificate holder's aircraft conformity and acceptance programs.
- Configuration and operating requirements of part 121 subparts J and K.
- Verification of supporting documents when adding new make or model aircraft to an existing certificate holder's certificate (operations specification (OpSpec) D085).
- Regulatory and advisory guidance.

NOTE: The references in this section may not be all inclusive and are subject to change.

10-9-1-3 RESERVED.

10-9-1-5 BACKGROUND.

A. General Information. A review of case law relating to airworthiness reveals that an aircraft must meet two conditions to be considered "airworthy," as defined in 14 CFR part 3, § 3.5(a). Additionally, an aircraft must be determined as eligible for the issuance of an airworthiness certificate under Title 49 of the United States Code (49 U.S.C.), § 44704(d)(1) and 14 CFR part 21, §§ 21.1(b)(1) and 21.183(a), (b), and (c). Two conditions that must be met for issuance of an airworthiness certificate as described in Volume 8, Chapter 5, Section 1, are:

1) The aircraft must conform to its type certificate (TC). The aircraft conforms to type design when the aircraft configuration and the components installed are consistent with the drawings, specifications, and other data that are part of the TC, which includes any Supplemental Type Certificate (STC) and field-approved alterations incorporated into the aircraft.

2) The aircraft must be in a condition for safe operation. This refers to the condition of the aircraft relative to wear and deterioration (e.g., skin corrosion, window delamination/crazing, fluid leaks, and tire wear). (Refer to the current edition of Federal Aviation

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Administration (FAA) Order 8130.2, Airworthiness Certification of Products and Articles, Chapter 2, Section 1, Paragraph 200.)

B. Standard Airworthiness Certificate. The aircraft must have a standard airworthiness certificate. This certificate remains valid as long as the aircraft:

1) Meets its approved type design.

2) Is in a condition for safe operation.

3) Has up-to-date maintenance and preventive maintenance.

4) Alterations are performed in accordance with 14 CFR parts 21, 43, and 91.

5) Conforms to the "Limitations" and "Supplement" sections within the approved Airplane Flight Manual (AFM).

C. Special Airworthiness Requirements in Part 121 Subpart J. The ACCD does not list specifications for aircraft certificated under Aerobulletin 7a, Airworthiness Requirements for Aircraft; Part 04 of the Civil Aviation Regulations (CAR) or nontransport category airplanes TC'd after December 31, 1964; and CAR 04b.

D. Request List. Figure 10-9-1A, Request List, is a list of items the aircraft owner/operator should have available to support the aircraft and document evaluation. This list is not all inclusive.

E. Related 14 CFR Parts that May be Listed. Title 14 CFR parts 21, 25, 39, 43, 45, 91, and 121.

F. Related Element Design Data Collection Tools (ED DCT) and Element Performance Data Collection Tools (EP DCT). The majority of the inspection items within this job aid contain specific regulatory requirements and are supported by the related ED/EP DCTs.

G. The Physical Inspection of the Aircraft (Including General Visual Inspection (GVI)). This inspection is a visual examination of the interior and exterior areas of the aircraft to evaluate equipment and manual requirements as required in part 121 and to detect obvious damage, failure, or irregularity. You, the aviation safety inspector (ASI), conduct this level of inspection under normally available lighting conditions, such as daylight, hangar lighting, flashlight, or drop light. This inspection may require the removal or opening of access panels or doors. Stands, ladders, or platforms may be required to access the area of inspection. Use normal inspection aids (as required), such as an inspection mirror, a flashlight, and a mechanic's 6-inch scale.

NOTE: This section may reference certification regulations, but they are not listed in the regulatory column.

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Figure 10-9-1A. Request List

Request List
Copy of the certificate holder's inspection document (configuration/conformity inspection).
Copy of the bridging (transfer) document and the Continuous Airworthiness Maintenance Program (CAMP) for the aircraft, including work cards and time limits (may be in electronic format).
The Maintenance Review Board (MRB) and Maintenance Planning Document (MPD) (manufacturer's recommended maintenance program) for the aircraft.
List of Passenger Accommodations (LOPA) for the interior and additional diagrams that might include location of emergency equipment, if not on the LOPA.
Passenger briefing cards.
Current aircraft equipment list (as revised).
The Federal Aviation Administration (FAA) will also ensure the operator has the aircraft in its tracking system (forecast, next check due, etc.).
Flight deck checklists.
Flammability test certifications for aircraft interior materials (14 CFR part 23, § 23.853 and part 25, § 25.853), as appropriate.
Skin mapping (repairs) and repair assessment, if applicable (14 CFR part 121, § 121.707).
Airplane Flight Manual (AFM) and company manual used in lieu of AFM, if applicable (part 121, § 121.141).
Major Repair and Alteration Report (§ 121.707(a)(b)).
Minimum equipment list (MEL).
Pilot aircraft operating manual (§ 121.135).
Engineering Orders (EO) accomplished.
Placard diagram and/or manual.
Records required by §§ 121.380 and 121.707.
In-flight manual (flight attendant (F/A) manual) (§ 121.135).
Technical documents that firmly establish the digital flight data recorder (DFDR) parameter types and accuracies, and the latest DFDR data download, if available.
All Supplemental Type Certificates (STC) for the aircraft.

Figure 10-9-1B. Aircraft Information Form

A	**Make/Model/Series**	**Current Registration**	**Date of Last "Heavy"**	**List of Passenger**
			(MM/DD/YY)	**Accommodations**
I	**Serial No.**	**Previous Registration**	**Date of Last "C" CK.**	**Yes No**
R			*(MM/DD/YY)*	**Repair Assessment**
C	**Line or Fuselage No.**	**Total Time (TT)**	**Last Operator**	**Available?**
R			*(Designator)*	**Yes No**
A	**Date of Manufacture**	**Total Cycles (TC)**	**Current Operator**	**Bridging Document**
F			*(Designator)*	**Available?**
T	**TC Data Sheet (No.)**	**Interior Configuration**		**Yes No**
		(# of PAX)		

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WGT				
	Operator's Empty Wgt.	Max Structural Wgt.	Max Take-Off Wgt.	Date of Last Weighing
				(MM/DD/YY)
	Max Zero Fuel Wgt.	Max Taxi or Ramp Wgt.	Max Landing Wgt.	Current Acft Equip List?
				Yes No

POWERPLANT				
	Power Plant 1	Power Plant 2	Power Plant 3	Power Plant 4
	Make/Model/Series	Make/Model/Series	Make/Model/Series	Make/Model/Series
	Serial No.	Serial No.	Serial No.	Serial No.
	Total Time (TT)	Total Time (TT)	Total Time (TT)	Total Time (TT)
	Total Cycles (TC)	Total Cycles (TC)	Total Cycles (TC)	Total Cycles (TC)
	Time Since Overhaul (TSO)	Time Since Overhaul (TSO)	Time Since Overhaul (TSO)	Time Since Overhaul (TSO)
	Powerplant Type Certificate Data Sheet (No.)			

PROPS				
	Propeller 1	Propeller 2	Propeller 3	Propeller 4
	Make/Model/Series	Make/Model/Series	Make/Model/Series	Make/Model/Series
	Serial No.	Serial No.	Serial No.	Serial No.
	Total Time (TT)	Total Time (TT)	Total Time (TT)	Total Time (TT)
	Total Cycles (TC)	Total Cycles (TC)	Total Cycles (TC)	Total Cycles (TC)
	Propeller Type Certificate Data Sheet (No.)			

APU				
	Make/Model/Series	Total Time (TT)	Time Since Overhaul (TSO)	Applicable to Acft TCDS?
				Yes No
	Serial No.	Total Cycles (TC)		

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LDG GEAR	Nose Gear	RH Main Gear	LH Main Gear	Other Gear Assemblies
	Make/Part Number	Make/Part Number	Make/Part Number	Make/Part Number
				/
	Serial No.	Serial No.	Serial No.	Serial Nos.
				/
	Total Time (TT)	Total Time (TT)	Total Time (TT)	Total Time (TT)
				/
	Total Cycles (TC)	Total Cycles (TC)	Total Cycles (TC)	Total Cycles (TC)
				/
	Time Since Overhaul (TSO)	Time Since Overhaul (TSO)	Time Since Overhaul (TSO)	Time Since Overhaul (TSO)
				/

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Table 10-9-1A. Configuration-Related Research

ITEM	CONFIGURATION-RELATED RESEARCH	REFERENCE
1	**Aircraft History.** Review aircraft information in Federal Aviation Administration (FAA) databases and other applicable sources.	Safety Performance Analysis System (SPAS) Integrated Safety Information Subsystem (ISIS) Foreign Civil Aviation Authority (FCAA) Manufacturer, etc.
2	**Airframe Type Certificate Data Sheets (TCDS).** **a.** Compare information on the TCDS to aircraft information the certificate holder provides. **b.** Research related information, including all TCDS notes (instructions for continued airworthiness (ICA), Reduced Vertical Separation Minimums (RVSM) eligibility, High Intensity Radiated Field (HIRF) requirements, basic equipment list, etc.).	14 CFR part 21, § 21.21 FAA Order 8130.2, Airworthiness Certification of Products and Articles, Chapter 8, Processing Forms, Reports, and Certification Files (current edition)
3	**Engine TCDS.** Review the applicability of the TCDS. Verify the compatibility of propellers to the installed engines.	§ 21.41 14 CFR part 33, § 33.1
4	**Propeller TCDS.** Review the applicability of the TCDS. Verify that the propellers are approved for operation with installed engines.	§ 21.41
5	**Master Minimum Equipment List (MMEL).** Obtain a copy of the current MMEL for comparison to the certificate holder's minimum equipment list (MEL) for correct revision.	http://fsims.faa.gov/PICResults.aspx?mode=Publication&doctype=MMEL
6	**Airworthiness Directives (AD) (Airframe, Engines, Propellers, and Appliances).** Research and generate an applicable AD listing.	http://www.faa.gov/regulations_policies/airworthiness_directives/

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ITEM	CONFIGURATION-RELATED RESEARCH	REFERENCE
	NOTE: It may not be possible to complete the list until after reviewing the manufacturer's and operator's appliance and equipment lists.	
7	**Additional Information.** Review any other information that is available and related to the specific aircraft being evaluated (e.g., SPAS, Safety Assurance System (SAS) automation, Web-based Operations Safety System (WebOPSS) authorization reference).	Will need to enter SAS via: https://sas.avs.faa.gov/sas.internal.portal/Home/InternalPortal#/UserAdminView?Key=Select_User http://home.spas.faa.gov/splash/splash.asp These are internal FAA sites only
8	**Review ICAs—(Maintenance Review Board Report (MRBR), Maintenance Planning Document (MPD), etc.).** Review ICAs for additional regulatory requirements (e.g., Certification Maintenance Requirements (CMR)).	Advisory Circular (AC) 121-22, Maintenance Review Boards, Maintenance Type Boards, and OEM/TCH Recommended Maintenance Procedures (current edition)

Table 10-9-1B. Manuals

ITEM	MANUALS	REFERENCE
1	**Airplane Flight Manual (AFM).** **a.** Verify that the certificate holder has a current and complete (including Airworthiness Directives (AD)) copy of the applicable manufacturer's Federal Aviation Administration (FAA)-approved AFM for the particular aircraft make, model, and serial number. **b.** Verify that all supplements are applicable, complete, and properly approved. **c.** Verify that the actual aircraft configuration conforms to the supplements, which includes Supplemental Type Certificate (STC)-derived supplements.	14 CFR part 91, § 91.9 14 CFR part 121, § 121.141
2	**Airplane Operations Manual (AOM).** **a.** If the operator elects to develop and use an AOM in lieu of the FAA-approved AFM (Item 1) to operate the aircraft, it must be current and complete with respect to the operator's master AOM and the FAA-approved AFM and supplements. It must	§ 121.141

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ITEM	MANUALS	REFERENCE
	match the subject aircraft configuration and account for the interrelationships between related systems. AOM operating procedures and performance information derived from the AFM must be accurate and clearly identified as such. AFM operating and performance information modified by the operator in the AOM must be FAA-approved. **b.** Verify that the AOM is part of the certificate holder's manual system. **c.** Verify that all AOM supplements or bulletins are appropriate and complete. **d.** Verify that the AOM is on board the aircraft, if required by the operator's manual.	
3	**Flight Deck Check Procedures (Checklist).** Verify that flight deck check procedures (checklists) are current and complete, properly approved, and limited to action or verification items. The operator's manual and training programs must thoroughly describe required actions and decisions for crewmembers performing a checklist.	§ 121.315 Volume 3, Chapter 32, Section 2
4	**Performance Requirements.** The performance requirements of 14 CFR part 25, §§ 25.101 through 25.125 apply to all aircraft certificated under part 25 subpart A. The performance requirements of Civil Aviation Regulation (CAR) 4b subpart B, §§ 4b.100 to 4b.125-1 apply to all aircraft certificated under CAR 4b. Each specific aircraft's performance and limitations for existing aircraft configuration, modifications, improvements, and engine installation must be included in the particular FAA-approved AFM or AOM.	§§ 121.141, 121.173, 121.189, 121.191, 121.193, 121.195, 121.197, 121.198; and part 121 appendix K
5	**Minimum Equipment List (MEL).** Verify that the operator's MEL is FAA-approved, is configured to the subject aircraft, and is current with respect to the Master Minimum Equipment List (MMEL).	§ 91.213 § 121.628 Volume 4, Chapter 4, Sections 1 and 7
6	**Weight and Balance (W&B) Manual (and Cargo Loading Manual, if Applicable).** **a.** Verify that the certificate holder's approved W&B manual is appropriate to the make, model, and series (M/M/S) of the subject aircraft. **b.** Verify that listed weights are configured to the Type Certificate Data Sheet (TCDS), AFM/AOM, and the current	§ 91.605 § 121.135 Volume 3, Chapter 47 AC 120-27, Aircraft Weight and Balance Control (current edition)

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ITEM	MANUALS	REFERENCE
	edition of Advisory Circular (AC) 120-27, Aircraft Weight and Balance Control.	
7	**Flight Attendant (F/A) Manual.** If the type of aircraft requires F/As per § 121.391, verify that the operator has a current, complete, and FAA-accepted manual available. Ensure that the manual accurately depicts the cabin configuration and equipment.	§§ 121.135, 121.139, and 121.391 Volume 3, Chapter 32, Section 13
8	**Other Manual Parts by Regulation.** **a.** Verify that all manual parts required by the operator to be carried on board the aircraft are in fact on board. **b.** Verify that the manual is current, is FAA-approved or FAA-accepted (as appropriate), and accurately reflects the aircraft configuration. **c.** Verify that the operator has a system to revise and keep current all of its technical manuals (e.g., Aircraft Maintenance Manual (AMM), Illustrated Parts Catalogue (IPC), and other manuals for maintaining its aircraft). (Part 121 operators are responsible for their manual system and maintaining the currency of this manual with the source (manufacturer's) document.)	§§ 121.133, 121.135, 121.139, and 121.369 Volume 3, Chapter 32, Section 11

Table 10-9-1C. Records

ITEM	RECORDS	REFERENCE
1	**Export Certificate of Airworthiness.** **a.** Does the aircraft have a properly issued U.S. Certificate of Airworthiness? **b.** Check the applicability of exemptions/deviations from the Type Certificate Data Sheet (TCDS) or other certification document. **c.** For foreign-registered aircraft, does the Foreign Civil Aviation Authority (FCAA)-issued Certificate of Airworthiness meet the regulatory requirements for the U.S. certificate holder service? (Refer to Title 14 of the Code of Federal Regulations (14 CFR) part 121, § 121.153(c).)	§ 121.153 Volume 3, Chapter 17 Volume 3, Chapter 31, Section 5 FAA Order 8130.2, Airworthiness Certification of Products and Articles (current edition)

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ITEM	RECORDS	REFERENCE
2	**Maintenance Overhaul/Time Controlled/Life-Limited Items/Certification Maintenance Requirements (CMR)/Airworthiness Limitations.** **a.** Review documentation for all articles subject to time/cycle/life limits. (Are the articles tracked by nomenclature, part number, serial number, lot number, or via records the operator retains?) **b.** Review the TCDS for specific tracking requirements. **c.** Does the operator have a system to verify inspection status, overhauls, and repetitive maintenance/inspection tasks for this specific aircraft? **d.** Are the requirements of the applicable Maintenance Review Board Report (MRBR) evident in the operators program? Have all MRBR requirements been met? (See Table 10-9-1A, Configuration-Related Research, for a description.) **e.** Are the records and inspection intervals in accordance with the certificate holder's authorized Continuous Airworthiness Maintenance Program (CAMP)? **f.** Perform a sampling inspection of articles/components installed on the aircraft. (Are the articles/components maintained in accordance with the certificate holder's authorized CAMP?)	§ 121.380 Volume 3, Chapter 31, Section 5 Volume 6, Chapter 2, Section 28 FAA Order 8110.54, Instructions for Continued Airworthiness Responsibilities, Requirements, and Contents (current edition) Advisory Circular (AC) 20-62, Eligibility, Quality, and Identification of Aeronautical Replacement Parts (current edition) AC 20-114, Manufacturers' Service Documents (current edition)
3	**Air Traffic Control (ATC) Transponder Test and Inspection.** **a.** Do the operator's records document the completion of the 24-month tests and inspection of the ATC transponder system (including altitude reporting equipment) in accordance with 14 CFR part 43 appendix F? **b.** Do the records support proper transponder reporting of the current aircraft Mode Select (Mode S) address?	Part 43 appendix F 14 CFR part 91, § 91.413 § 121.345

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ITEM	RECORDS	REFERENCE
4	**Repair Assessment and Survey of Pressurized Fuselages (Damage-Tolerance (DT)-Based Inspections and Procedures).** Check the aircraft records to ensure that inspections, repairs, and alterations made to the pressure vessel of the aircraft are configured to the certificate holder's program and regulatory requirements.	Part 43 appendix A, operations specification (OpSpec) D097, and § 121.1107 Volume 6, Chapter 2, Section 28 Volume 6, Chapter 11, Section 14 FAA Order 8300.13, Repair Assessment Program (current edition) AC 25.571-1, Damage Tolerance and Fatigue Evaluation of Structure (current edition) AC 91-56, Continuing Structural Integrity Program for Airplanes (current edition)
5	**Temporary Repairs.** **a.** Check the records of temporary repairs made to the aircraft for compliance with program and regulatory requirements. **b.** Perform a spot check of the aircraft for evidence of repairs and correlate those repairs to supporting documentation.	§ 43.13 Volume 3, Chapter 36 FAA Order 8300.13 AC 25-22, Certification of Transport Airplane Mechanical Systems (current edition) AC 120-73, Damage Tolerance Assessment of Repairs to Pressurized Fuselages (current edition)
6	**Supplemental Type Certificates (STC).**	§ 91.403(d)

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ITEM	RECORDS	REFERENCE
	a. Check that FAA-approved data support the installed STCs. **b.** Check that the installations are not partial applications of the STC. **c.** Check the installations to the data and ensure that the required changes to the operating manuals (AFM supplements) and maintenance manuals address the change. **d.** Review the instructions for continued airworthiness (ICA) provided with the STC and ensure these requirements are addressed in the operator's maintenance/inspection program and publications. **e.** Check STCs installed on the aircraft. Check for evidence that the interrelationship of the installations was reviewed and determined to be acceptable (STC requirement).	§§ 121.367, 121.379, 121.380, and 121.707 Volume 3, Chapter 36, Section 1 Volume 4, Chapter 3, Sections 1 and 3 Volume 6, Chapter 11, Section 2
7	**Airworthiness Directives (AD).** **a.** Check that the operator has a method to track the current status of all applicable ADs. The records must conform to the requirements of the certificate holder's manual. The information must be specific enough to identify each AD by the: 1) Date accomplished. 2) Method of accomplishment. 3) One-time or recurring. 4) Time/date of the next required action. **b.** Do alternative methods of compliance (AMOC) satisfy an AD requirement (if applicable)? 1) Does documentation exist approving the AMOC, and does it allow the specific certificate holder to use that AMOC as a basis for compliance as specified within its text? 2) Spot check of one-time and recurring ADs (airframe, engine, propeller, and appliance). 3) Does the operator have a system to track and report AD status and compliance?	14 CFR part 39 § 91.403 § 121.380
8	**Major Repairs and Alterations.** **a.** Review records for current major repairs and alterations for each airframe, engine, propeller (if applicable), and appliance. **b.** Is there documentation for each major repair and alteration, and was it accomplished in accordance with FAA-approved technical data? (e.g., STC, Structural Repair Manual (SRM), Designated Engineering Representative (DER), FAA field approval, etc.) **c.** Are there ICAs for each alteration and/or repair included in the certificate holder's maintenance and inspection program?	§ 43.9 Part 43 appendix A Part 43 appendix B §§ 121.379, 121.380 121.707, and 121.709 Volume 6, Chapter 11, Section 2

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ITEM	RECORDS	REFERENCE
		AC 120-77, Maintenance and Alteration Data (current edition)
9	**Digital Flight Data Recorder System (DFDRS) or Flight Data Recorder System (FDRS), as Applicable.** **a.** Does the certificate holder maintain the correlation data required by the applicable part 121 section? **b.** Review DFDRS or FDRS download/analysis records required by the certificate holder's manual. **c.** Check the recorder system for all required parameters. **d.** Is there a system for the analysis download and documenting discrepancies? Are those discrepancies corrected per the certificate holder's manual? **e.** Verify the record of filtered parameters.	§§ 121.343, 121.344, 121.344(a), and 121.346 Part 121 appendix B Part 121 appendix M Volume 4, Chapter 14, Section 8 AC 20-141, Airworthiness and Operational Approval of Digital Flight Data Recorder Systems (current edition)
10	**CMRs.** Verify that all CMR tasks were properly incorporated into the operator's programs (e.g., CAMP). Methods and time intervals associated with these tasks must be FAA-approved by the Aircraft Certification Office (ACO) and certificate-holding district office (CHDO), as applicable, in the certificate holder's OpSpecs. CMRs may be located in the applicable MRBR.	14 CFR part 119, § 119.49 § 121.367
11	**Fuel Tank Safety (FTS), Regulatory Requirements.** Section 121.1113 states that after December 16, 2008, no certificate holder may operate an airplane unless that operator has revised the maintenance program for that airplane to include applicable inspections, procedures, and limitations for the fuel tank systems. This requirement specifically addresses the "No Unsafe Condition" category, task, and intervals found in Volume 6, Chapter 11, Section 23, paragraph 6-2698. This means that the operator must include in its maintenance or inspection program the type certificate holder (TCH)-developed MRBR or maintenance implementation document revisions.	§§ 121.1111, 121.1113, and 121.1117 OpSpec D097 Volume 3, Chapter 18, Section 6 Volume 6, Chapter 11, Section 23

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ITEM	RECORDS	REFERENCE
12	**Automatic Dependent Surveillance-Broadcast (ADS-B).** On May 27, 2010, the FAA published new rules (contained in §§ 91.225 and 91.227) mandating airspace and avionics performance requirements after January 1, 2020. The avionics perform a function that is generally known as "ADS-B Out," which transmits precise location and other information about the aircraft to ground stations and other ADS-B-equipped aircraft. The ADS-B rule mandates ADS-B Out avionics performance when operating within the designated airspace, giving aircraft owners approximately 10 years to equip. The ADS-B rule, like current transponder operating requirements, requires operators to have ADS-B Out avionics installed and operating in order to fly their aircraft in the busiest airspace as described in the following: • Class A, B, and C airspace; • All airspace at and above 10,000 feet mean sea level (MSL) over the 48 contiguous United States and the District of Columbia; • Within 30 nautical miles (NM) of airports listed in § 91.225, from the surface up to 10,000 feet MSL; and • Class E airspace over the Gulf of Mexico from the coastline of the United States out to 12 NM, at and above 3,000 feet MSL. FAA Technical Standard Orders (TSO) describe the equipment approved for ADS-B operations. The ADS-B rule states that avionics must meet the standards of either TSO-C166b, Extended Squitter Automatic Dependent Surveillance-Broadcast (ADS-B) and Traffic Information Service-Broadcast (TIS-B) Equipment Operating on the Radio Frequency of 1090 Megahertz (MHz), for 1090ES link equipment or TSO-C154c, Universal Access Transceiver (UAT) Automatic Dependent Surveillance-Broadcast (ADS-B) Equipment Operating on Frequency of 978 MHz, for UAT link equipment. TSO-C166b is required in Class A airspace and either link can be used in all other airspace. For more information about the FAA's ADS-B program, visit http://www.faa.gov/nextgen/programs/adsb/.	§§ 91.225 and 91.227

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Table 10-9-1D. Inspection Program and Programs Covering Other Maintenance, Preventive Maintenance, and Alterations

ITEM	INSPECTION PROGRAM AND PROGRAMS COVERING OTHER MAINTENANCE, PREVENTIVE MAINTENANCE, AND ALTERATIONS	REFERENCE
1	**Inspection Program and Programs Covering Other Maintenance, Preventive Maintenance, and Alterations.** If the certificate holder is adding the same make, model, and series (M/M/S) aircraft that it is operating, verify proper correlation between the operator's maintenance tasks and time limitations for its approved maintenance program. If the certificate holder does not have prior operating experience with the M/M/S aircraft being evaluated, verify that the operator-developed maintenance program for aircraft and installed components are based on the manufacturer's recommended baseline program (e.g., Maintenance Review Board Report (MRBR), Maintenance Planning Document (MPD), etc.) and other Federal Aviation Administration (FAA) requirements. In this manner, the continuing airworthiness of the aircraft and installed components is ensured, and only those tasks that are applicable and effective are performed. If the aircraft was operated under a different maintenance program by a previous operator, verify proper transition (bridging) of the previously accumulated times and/or cycles to the current certificate holder's instructions for continued airworthiness (ICA). The maintenance program must include damage tolerance rating (DTR) evaluations and structural inspection requirements. NOTE: Refer to the Maintenance Review Board (MRB) and/or Airworthiness Directives (AD), as applicable. **Airplane Configuration Process.** Verify that the certificate holder has an aircraft configuration or similar process within its manual system, and that the process results in the aircraft meeting its type design or properly altered condition. Verify that the certificate holder's inspection program and programs covering other maintenance, preventive maintenance, and alterations are acceptable to the Administrator before the aircraft is added to the operations specifications (OpSpecs) D085.	14 CFR part 91, § 91.409(h) 14 CFR part 119, § 119.49 14 CFR part 121, § 121.367 Volume 3, Chapter 43, Section 1 Volume 6, Chapter 2, Section 28 Advisory Circular (AC) 120-16, Air Carrier Maintenance Programs (current edition) AC 120-73, Damage Tolerance Assessment of Repairs to Pressurized Fuselages (current edition)

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ITEM	INSPECTION PROGRAM AND PROGRAMS COVERING OTHER MAINTENANCE, PREVENTIVE MAINTENANCE, AND ALTERATIONS	REFERENCE
2	**Very High Frequency Omnidirectional Range Station (VOR) Equipment Checks for Instrument Flight Rules (IFR) Operations.** Verify that the aircraft is included in the operator's program. Ensure that the VOR equipment of the aircraft is maintained, checked, and inspected under an approved procedure, or is operationally checked within the preceding 30 days and was found to be within the limits of the indicated permissible bearing error set forth in § 91.171. Also see related Item 4 under Table 10-9-1C.	§ 91.171 § 121.367 Volume 6, Chapter 2, Section 28
3	**High Intensity Radiated Field (HIRF)/Lightning Protection Maintenance Program.** Verify that the aircraft is included and maintained in accordance with the certificate holder's HIRF maintenance and inspection programs. Refer to the MRBR and Supplemental Type Certificate (STC).	§ 121.367 Volume 3, Chapter 43, Section 1 Volume 6, Chapter 2, Section 28 AC 20-53, Protection of Aircraft Fuel Systems Against Fuel Vapor Ignition Caused by Lightning (current edition) AC 20-136, Aircraft Electrical and Electronic System Lightning Protection (current edition) AC 20-158, The Certification of Aircraft Electrical and Electronic Systems for Operation in the High-intensity Radiated Fields (HIRF) Environment (current edition)
4	**Air Traffic Control (ATC) Transponder Tests and Inspections.** Verify that the aircraft is included and maintained in accordance with the certificate holder's program and that the program included 24-month tests and inspections of the ATC transponder systems in accordance with 14 CFR part 43 appendix F. Tests and inspections should include altitude reporting equipment.	Part 43 appendix F § 91.413 § 121.367 AC 20-131, Airworthiness Approval of Traffic Alert and Collision Avoidance Systems (TCAS II) and Mode S Transponders (current edition)

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ITEM	INSPECTION PROGRAM AND PROGRAMS COVERING OTHER MAINTENANCE, PREVENTIVE MAINTENANCE, AND ALTERATIONS	REFERENCE
5	**Reduced Vertical Separation Minimums (RVSM).** If authorized to conduct RVSM operations, verify that the aircraft conforms to its RVSM data package and that the aircraft is maintained in accordance with the certificate holder's approved program.	§§ 91.3, 91.703, 91.706, and 91.180 Part 91 appendix G Volume 4, Chapter 1, Section 5 Volume 4, Chapter 10, Section 1 AC 91-70, Oceanic and International Operations (current edition)
6	**Flight Data Recorder System (FDRS).** Verify that as a minimum, the certificate holder's maintenance program meets the requirements of AC 20-141, Airworthiness and Operational Approval of Digital Flight Data Recorder Systems (current edition).	§ 121.367 Volume 4, Chapter 14, Section 8 AC 20-141
7	**Underwater Locating Device (ULD).** Verify that operational and battery capacity tests of each ULD were performed in accordance with the certificate holder's Continuous Airworthiness Maintenance Program (CAMP).	§§ 121.343(k), 121.359, and 121.359(c)(2)(iii) Volume 4, Chapter 14, Section 8 Volume 4, Chapter 14, Section 9
8	**Corrosion Prevention and Control Program (CPCP).** Verify that the certificate holder has a CPCP. This program defines the minimum requirements for preventing or controlling corrosion problems that may jeopardize continuing airworthiness of the aircraft. To meet these requirements, operators must have effective corrosion prevention and control procedures incorporated into the maintenance program for all airplanes reaching or exceeding the implementation age. The level of corrosion found on Principal Structural Elements (PSE) determines the effectiveness of a corrosion control program for a given airplane area.	§ 121.367 Volume 3, Chapter 43, Section 1 Volume 6, Chapter 2, Section 28 Order 8300.12, Corrosion Prevention and Control Programs (current edition) For MSG-1 and -2 aircraft, refer to Order 8300.12. For all MSG-3 and above aircraft, refer to the manufacturer's MRBR and/or ADs, as applicable.
9	**Engines, Auxiliary Power Unit (APU).** Ensure the engines and APU are included and maintained in accordance with the operator's current maintenance and inspection programs. Refer to the MRBR and/or ADs (as applicable).	§ 121.367 Volume 3, Chapter 43, Section 1 Volume 6, Chapter 2, Section 28 AC 120-16

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ITEM	INSPECTION PROGRAM AND PROGRAMS COVERING OTHER MAINTENANCE, PREVENTIVE MAINTENANCE, AND ALTERATIONS	REFERENCE
10	**Lower Landing Minimums.** If authorized to conduct Category II/III Approach (CAT II/CAT III) operations, verify that the aircraft conforms to, and is maintained in accordance with, the certificate holder's approved program. (Refer to OpSpecs C059 and C060.)	§§ 121.367, 121.369(b), and 121.567 Volume 3, Chapter 18, Section 5 Volume 4, Chapter 2, Section 11 AC 120-28, Criteria for Approval of Category III Weather Minima for Takeoff, Landing, and Rollout (current edition) AC 120-29, Criteria for Approval of Category I and Category II Weather Minima for Approach (current edition)
11	**Electrical Wiring Interconnection Systems (EWIS) Maintenance Program.** Verify that the operator has an EWIS maintenance program. Text below is excerpted from § 121.1111(b). "After March 10, 2011, no certificate holder may operate an airplane identified in paragraph (a) of this section unless the maintenance program for that airplane includes inspections and procedures for electrical wiring interconnection systems (EWIS)." Submit revisions to the principal ASI for review and approval. Once the program is incorporated, ensure required inspections have been accomplished.	§ 121.1111

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Table 10-9-1E. Fuselage, Exterior, Engines, and Propellers

ITEM	FUSELAGE, EXTERIOR, ENGINES, AND PROPELLERS	REFERENCE
1	**Radome Area.** **a.** Inspect radome, erosion cap, and lightning diverter strips for condition and security. **b.** If the radome internal area is accessible, do the following: 1) Inspect exposed electronic/electrical components for condition, security, and proper bonding/grounding (antennas, weather radar waveguide, cable and wire bundles, connectors, etc.). 2) Inspect the exposed airframe area (forward-pressure bulkhead) for condition, corrosion, damage, and repairs. When repairs are noted, including the radome, check the repair data at the certificate holder's record section for Federal Aviation Administration (FAA)-approved or FAA-accepted data.	14 CFR part 121, §§ 121.135, 121.367, and 121.369 Volume 6, Chapter 2, Section 4
2	**Pitot Air Probes.** **a.** Inspect for proper installation, condition, and type. Probes must have a heat function (or equivalent means for preventing malfunctioning due to icing). Ports must be free of obstructions. **b.** Visually inspect the critical surface areas around the probes for any irregularity that could impair the effectiveness of the probes. If repairs are noted, check the repair data at the certificate holder's record section for FAA-approved data.	§§ 121.323, 121.325, 121.341, and 121.342
3	**Static Pressure Ports.** **a.** Check ports for condition. Check that all openings are free of obstructions. **b.** Visually inspect the critical surface areas around the probes for any irregularity that could impair the effectiveness of the ports. **c.** If repairs are noted, check the repair data at the certificate holder's record section for FAA-approved data.	§§ 121.313 and 121.341 Advisory Circular (AC) 120-73, Damage Tolerance Assessment of Repairs to Pressurized Fuselages (current edition)

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ITEM	FUSELAGE, EXTERIOR, ENGINES, AND PROPELLERS	REFERENCE
4	**External Lights.** Inspect the proper installation, condition, and weather sealing of all external lights and light lenses. Check the operation of the following: **a.** Anti-collision lights, fuselage. **b.** Wing tip and tail white gas discharge lights (strobe lights). **c.** Exterior emergency lights (if installed). **d.** Landing lights. **e.** Taxi lights. **f.** Position lights. **g.** Wing icing detection lights. **h.** If high-intensity (strobe) lights are used, verify at the operator's record repository for the latest luminosity check. **i.** Wheel well lights (if installed).	§§ 121.323 and 121.341 AC 20-30, Aircraft Position Light and Anticollision Light Installations (current edition) AC 20-74, Aircraft Position and Anticollision Light Measurements (current edition) AC 43.13-2, Acceptable Methods, Techniques, and Practices—Aircraft Alterations (current edition)
5	**Antennas.** Inspect for proper installation and condition, such as leading edge erosion and cracking of the composite covering. Pay particular attention to possible corrosion under antenna bases.	§§ 121.345 and 121.367 Volume 6, Chapter 2, Section 4
6	**Miscellaneous Fuselage Sensors (e.g., ice detection, total air temperature, vibration).** Inspect sensors for condition, security, and corrosion on fuselage skin.	§ 121.367 Volume 6, Chapter 2, Section 4
7	**Static Dischargers.** Inspect for proper condition and security, and for the proper discharger types, quantities, and locations. Consult the appropriate aircraft documentation for the proper type. Refer to Master Minimum Equipment List (MMEL) and Configuration Deviation List (CDL) for minimum required.	§ 121.367 Volume 6, Chapter 2, Section 4

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ITEM	FUSELAGE, EXTERIOR, ENGINES, AND PROPELLERS	REFERENCE
8	**Aircraft Inspection (with Doors, Compartment Doors, and Service Panels Opened; Flaps and Slats Down).** **a.** Inspect the aircraft exterior for general condition, damage, corrosion, fluid leaks, etc. Check fuel drains, fuel vents, fuel filler caps, and underwing fuel filler hard point. **b.** Check the security of attachment of control surfaces and corrosion prevention treatment application. **c.** Check wing and tail leading edges for dents and erosion. **d.** Check heating pads on top of wing surfaces above inboard fuel tanks for condition. **e.** Examine joints, seams, and skin for wrinkles, bulges, fasteners, skin erosion, corrosion, and oxidation. **f.** When dents are noted, verify at the operator's record repository and/or the aircraft maintenance log that a limit check is performed and noted. **g.** Check composite material panels for moisture contamination and bonding, delaminating, or separation of skin-bonding. **h.** Check windshield wipers for condition, security, and operation. **i.** Compare repair mapping with aircraft. Pay attention to critical areas. **j.** If repairs are noted, check the repair data at the certificate holder's record repository for FAA-approved data.	Volume 6, Chapter 2, Section 4 AC 20-116, Marking Aircraft Fuel Filler Openings With Color Coded Decals (current edition) AC 43-204, Visual Inspection for Aircraft (current edition)
9	**Aircraft Painting.** **a.** Check for condition, flaking, and evidence of corrosion at seams and fasteners; and for filliform corrosion under painted surfaces. **b.** Verify at the operator's record repository that accepted materials and procedures were followed, including the balancing of flight control surfaces.	Volume 6, Chapter 2, Section 4 AC 120-27, Aircraft Weight and Balance Control (current edition)
10	**Identification of Aircraft.** Verify that a fireproof identification plate or other approved marking is attached to the aircraft with all pertinent data as required by, and in accordance with, applicable 14 CFR parts.	14 CFR part 45, §§ 45.11 and 45.13 AC 45-2, Identification and Registration Marking (current edition)

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ITEM	FUSELAGE, EXTERIOR, ENGINES, AND PROPELLERS	REFERENCE
11	**Name of Certificate Holder.** Verify that the aircraft legibly displays the business name or certificate number appearing on the aircraft certificate holder's operations specifications (OpSpecs). Ensure the display is clearly visible and readable to a person standing on the ground at any time except during flight.	14 CFR part 119, § 119.9
12	**Placards, Markings, Exterior Exit Markings.** **a.** Check that all placards are properly installed at the location specified by the FAA-approved Airplane Flight Manual (AFM), aircraft type certification basis, applicable operating rules, and the operator's manual. **b.** Check that all placards and/or markings are not easily erased, disfigured, or obscured. Check that each passenger emergency exit is marked on the outside of the aircraft by a 2-inch contrasting colored band. **c.** Check that instructions for the means of opening those exits from the outside are marked on the outside of each passenger emergency exit. **d.** If the emergency exit is located only on one side of the fuselage, check that it has a conspicuous marking on the other side.	§ 121.310 AC 20-88, Guidelines on the Marking of Aircraft (current edition)
13	**Exterior Escape Route.** **a.** Check that the surface of each emergency escape route is made of slip-resistant material. **b.** Check general condition of emergency slip-resistant escape route.	§ 121.310
14	**Windows.** **a.** For passenger compartment windows, inspect for general condition, security, visibility, scratches, crazing, and condensation. **b.** For flight deck windshield, side windows, direct-view windows, or operable sliding windows, check for condition and delamination. **c.** Check condition of windshield wipers.	§ 121.313 AC 25.775-1, Windows and Windshields (current edition)

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ITEM	FUSELAGE, EXTERIOR, ENGINES, AND PROPELLERS	REFERENCE
15	**Doors (Cabin, Cargo Compartment, Emergency Escape, Service, and Access).** **a.** Inspect all exterior doors, hatches, and servicing access panels for general condition and installation. **b.** Check for damage, corrosion, security of attachment, and the application of corrosion prevention treatment. Pay particular attention to doorjamb areas and door seals. Check doors for proper operation. **c.** Check the hold open latches on floor-level doors for general condition and proper operation. **d.** For aircraft with a ventral exit, check that it has provisions to prevent it from being opened during flight. For inward opening doors, check for a means to prevent crowding against the door. **e.** Check that the emergency doors and/or hatches/plugs can be opened from the inside by the flightcrew, as well as from the outside of the aircraft in normal ground configuration by emergency rescue personnel. **f.** Check viewing ports for damage, deterioration, distortion, and security to permit viewing the conditions outside the exit(s) when closed. **g.** Check for a provision for a visual inspection of the door-locking mechanism to determine that doors are fully closed and locked (excluding inward-opening doors). **h.** If repairs are noted, check the repair data at the certificate holder's record repository for FAA-approved data. **i.** Check for the appropriate amount and type of exits.	§ 121.310 AC 20-60, Accessibility to Excess Emergency Exits (current edition) AC 25.783-1, Fuselage Doors and Hatches (current edition)
16	**Fuel Tank Impact Resistant Access Doors.** Inspect for general condition, security, and position marking. Refer to 14 CFR part 25, § 25.963.	§§ 121.316 and 121.1113

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ITEM	FUSELAGE, EXTERIOR, ENGINES, AND PROPELLERS	REFERENCE
Engines		
17	**Engines, Mounting Structure, and Compartments.** **a.** Inspect for cleanliness, general condition, loose/missing equipment, breakage, signs of fluid leaks, corrosion, proper installation, and other indications of defects. **b.** Check fire extinguishing system components and extinguishing agent indicators. **c.** Inspect the visible inlet guide vanes and compressor and turbine blades for dents, erosion, nicks, and other irregularities. Check the electronic engine control (EEC)/full-authority digital electronic control (FADEC) unit (if installed) for general condition, corrosion, and security. **d.** Check electrical wiring for condition and security.	AC 43-204 AC 43-206, Inspection, Prevention, Control, and Repair of Corrosion on Avionics Equipment (current edition)
18	**Engine Nacelles.** **a.** Check for general condition, dents, scratches, loose or missing fasteners, corrosion, erosion, etc. **b.** Check acoustic panels for general condition.	AC 43-204 AC 43-206
19	**Thrust Reversers and Blocker Doors.** Check for general condition, dents, corrosion, fluid leaks, proper installation, and indications of defects. If repairs are noted, verify at the operator's records repository repair data for FAA-approved data.	AC 43-204

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ITEM	FUSELAGE, EXTERIOR, ENGINES, AND PROPELLERS	REFERENCE
20	**Auxiliary Power Unit (APU).** **a.** Inspect the APU for cleanliness, fire containment shrouds, and seals for general condition. **b.** Check exhaust ducts for general condition, signs of leaks, and proper mounting. **c.** Check for loose/missing equipment, breakage, signs of fluid leaks, corrosion, proper installation, and indications of defects. **d.** Check the APU EEC/FADEC unit (if installed) for general condition, corrosion, and security. **e.** Check APU compartment for general condition, corrosion, and damage. **f.** If the rear pressure bulkhead is visible, check for condition, corrosion, and evidence of damage and repairs. **g.** Check the exposed airframe structure for general condition, corrosion, damage, and repairs. **h.** Check the condition of the fire extinguishing system components and extinguishing agent indicators. **i.** Check that the power cable(s) is isolated from flammable fluid lines, or shrouded by a nonmetallic, flexible conduit in addition to the cable insulation. **j.** Check all wiring and power cables for proper attachment, routing, and security to the airframe structure.	AC 43-204 AC 43-206
21	**Identification of Engines.** **a.** Check for the presence of a fireproof identification plate or other approved marking on each engine, as required by the referenced data. **b.** Verify the data with the operator's supplied data sheet.	§§ 45.11 and 45.13 AC 45-2 AC 45-3, Installation, Removal, or Change of Identification Data and Identification Plates on Aircraft Engines (current edition)

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ITEM	FUSELAGE, EXTERIOR, ENGINES, AND PROPELLERS	REFERENCE
22	**Identification of the APU.** **a.** If applicable, check for the presence of a fireproof identification plate or other approved marking containing the data required by the referenced data. **b.** Verify the data with the operator's supplied data sheet.	§§ 45.11 and 45.13 AC 45-2 AC 45-3
23	**EECs Including APU FADEC.** **a.** If applicable, check for installation and security of the EEC and mounting hardware. **b.** Check electrical cabling and connectors for general condition, corrosion, and security. **c.** Verify the installation of proper version software at the operator's records repository.	14 CFR part 33, § 33.28 AC 33.28-1, Compliance Criteria for 14 CFR § 33.28, Aircraft Engines, Electrical and Electronic Engine Control Systems (current edition)
Propellers		
24	**Identification of Propellers, Propeller Blades, and Propeller Hubs.** **a.** Verify that each propeller, propeller blade, and propeller hub is identified in accordance with the referenced guidance material. **b.** Verify the data with the operator's supplied data sheet.	§§ 45.11 and 45.13 AC 45-2
25	**Propeller Inspection.** **a.** Inspect the condition and security of spinner, blades, hub, pitch locks (if installed or visible), anti/deicing slip ring, brushes and wiring (if installed), boots and electrical wiring, etc. **b.** Check composite blades for erosion, disbonding, and delamination, and check the ultraviolet coating for condition. **c.** Check leading edges for condition and attachment. **d.** For metal blades, check for general condition and leading edges for erosion, nicks, and dents. **e.** Check the aircraft records for FAA-approved repair data.	AC 43-204 AC 43-206

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Table 10-9-1F. Fuselage Interior

ITEM	FUSELAGE INTERIOR	REFERENCE
1	**Aircraft Registration.** Each aircraft must have inside it: • An effective U.S. registration certificate issued to its owner; • For operation in the U.S., the second duplicate (pink) copy of the Aircraft Registration Application; or • A registration certificate issued under the laws of an International Civil Aviation Organization (ICAO) member country displayed in accordance with the certificate holder's requirements.	14 CFR part 91, § 91.203 14 CFR part 121, § 121.153
2	**Airworthiness Certificate.** Except as provided in § 91.715, there must be within the aircraft an appropriate and current airworthiness certificate. It must be the original (not a copy), and must be displayed at the cabin or flight deck entrance so that it is legible to passengers or crew, and is in accordance with the certificate holder's requirements. NOTE: For a foreign airworthiness certificate, check for the expiration date.	§§ 91.203 and 91.715 § 121.153
3	**Federal Communications Commission (FCC) Radio Station License.** This is required for other-than-domestic operations. This license must be issued to the aircraft operator and must be updated if the addition of the aircraft results in the operator's fleet exceeding the number of aircraft for which the license was issued. NOTE: Requirement of FCC, ICAO Articles 29 and 30.	
4	**General Placards and Markings.** Verify the presence and inspect the condition of cabin interior placards and markings in accordance with the certificate holder's manual, Type Certificate Data Sheet (TCDS), Supplemental Type Certificate (STC), Airplane Flight Manual (AFM), and chapter 11 of the Aircraft Maintenance Manual (AMM).	§§ 121.310 and 121.317
5	**General Equipment Installation.** Inspect the proper condition, security, and configuration of equipment and systems.	§§ 121.153 and 121.367

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ITEM	FUSELAGE INTERIOR	REFERENCE
6	**Flight Deck Voice Recorder.** Large, turbine-engine-powered, or large pressurized airplanes with multiengine aircraft having a passenger seat configuration with more than 10 seats, must have an approved flight deck voice recorder installed. Check for proper condition (e.g., color of recorder case and reflective tape), security, and configuration.	§ 91.609 § 121.359 Volume 4, Chapter 14, Section 9
7	**Flight Data Recorder System (FDRS).** Check for proper condition (e.g., color of recorder case and reflective tape), security, and configuration.	§ 91.609 Volume 4, Chapter 14, Section 8
8	**Compartment Interiors/Fire Resistance.** **a.** Look on the backs of cushions to identify if the seats have been fire-blocked. The cushions must meet the requirements of 14 CFR part 25, § 25.853(c). Review documentation of flame testing. Includes material for walls, furnishings, and ceiling. **b.** The following is excerpted from § 121.312(e): "(e) Thermal/acoustic insulation materials. For transport category airplanes type certificated after January 1, 1958: (1) For airplanes manufactured before September 2, 2005, when thermal/acoustic insulation is installed in the fuselage as replacements after September 2, 2005, the insulation must meet the flame propagation requirements of § 25.856 of this chapter, effective September 2, 2003, if it is: (i) Of a blanket construction or (ii) Installed around air ducting. (2) For airplanes manufactured after September 2, 2005, thermal/acoustic insulation materials installed in the fuselage must meet the flame propagation requirements of § 25.856 of this chapter, effective September 2, 2003. (3) For airplanes with a passenger capacity of 20 or greater, manufactured after September 2, 2009, thermal/acoustic insulation materials installed in the lower half of the fuselage must meet the flame penetration resistance requirements of § 25.856 of this chapter, effective September 2, 2003."	§ 25.853(c) §§ 121.215, 121.312, and 121.312(e)

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ITEM	FUSELAGE INTERIOR	REFERENCE
9	**Fuselage Interior (Cabin and Equipment Compartments).** **a.** Inspect interior and compartments for cleanliness, general condition, loose and/or missing equipment, deterioration, leakage, corrosion, proper installations, and other indications of defects. Pay particular attention to control cables and fluid lines. **b.** Inspect for the proper application of corrosion prevention treatments in the forward and rear pressure bulkheads, interior, and accessible under-floor areas.	§ 121.367 Volume 6, Chapter 2, Section 6
10	**Lavatory Placard.** The lavatory must have a sign or placard stating, "Federal Law provides for a penalty of up to $2,200 (or $2,000), as applicable, for tampering with the smoke detector installed in this lavatory."	14 CFR part 13, § 13.305 § 121.317 Volume 6, Chapter 2, Section 4
11	**Ashtrays.** If smoking is allowed in any other compartment occupied by the crew or passengers, an adequate number of self-contained, removable ashtrays must be provided for all seated occupants. Lavatories must have self-contained, removable ashtrays located conspicuously on or near the entry side of each lavatory door, except that one ashtray may serve more than one lavatory door if it can be seen readily from the cabin side of each lavatory served.	§ 121.215 AC 25-17, Transport Airplane Cabin Interiors Crashworthiness Handbook (current edition)
12	**Waste Receptacle.** Each receptacle used for the disposal of flammable waste material must be fully enclosed, constructed of at least fire resistant materials, and must be able to contain fires likely to occur in it under normal use. The capability of the receptacle to contain those fires under all probable conditions of wear, misalignment, and ventilation expected in service must be demonstrated by test. Airworthiness Directive (AD) 74-08-09, Various Transport Category Airplanes, requires operators to inspect all lavatory paper and linen waste receptacle enclosure access doors and disposal doors for proper operation, fit, sealing, and latching for the containment of possible trash fires. A placard containing the legible words "No Cigarette Disposal" must be located on or near each disposal receptacle door.	§ 121.215 AD 74-08-09
13	**Ventilation.** Where partitions between compartments have louvers or other means that allow air to flow between compartments, there must be a means convenient to the crew for closing the flow of air through the partitions, when necessary. NOTE: Emphasize with new or altered interiors (STC).	§ 121.219

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ITEM	FUSELAGE INTERIOR	REFERENCE
14	**Carriage of Cargo in Passenger Compartments.** **a.** Ensure that each compartment or area used for the stowage of cargo and/or baggage provides protection to the passengers and crewmembers from injury by its contents. **b.** Ensure that there are provisions to prevent the cargo/baggage from becoming a hazard by shifting. **c.** Ensure that a compartment used for stowage is placarded for its weight limits.	§§ 121.285 and 121.589 Volume 3, Chapter 33, Section 6
15	**Galleys/Service Centers.** Verify proper approval. Inspect the following: trash bin lids for fit, storage compartment restraints, stationary cart tie-downs, lower lobe equipment and restraints, lift operation, and galley supplies stowage.	§ 121.367
16	**Stowage Compartments.** Check weight restriction placards and the doors for proper latching, if applicable. Each compartment for the stowage of cargo, baggage, carry-on articles, and equipment (such as life rafts), and any other stowage compartment must be designed for: **a.** Its placarded maximum weight of contents. **b.** The critical load distribution at the appropriate maximum load factors corresponding to the specified flight and ground load conditions. **c.** The emergency landing conditions of § 25.561(b). If the airplane has a passenger-seating configuration (excluding pilots' seats) of 10 seats or more, each stowage compartment in the passenger cabin (except for under-seat and overhead compartments for passenger convenience) must be completely enclosed. There must be a means to prevent the contents in the compartments from becoming a hazard by shifting under the specified loads. For stowage compartments in the passenger and crew cabin, if the means used is a latched door, the design must consider in-service wear and deterioration.	§§ 121.285 and 121.589
17	**Retention of Items of Mass in Passenger and Crew Compartments and Galleys.** Means must be provided to prevent each item of mass (that is part of the airplane type design) in a passenger or crew compartment or galley from becoming a hazard by shifting under the appropriate maximum load factors corresponding to the specified flight and ground load conditions, and to the emergency landing conditions of § 25.561(b).	§§ 91.523, 121.576, and 121.589 Volume 3, Chapter 33, Section 6

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ITEM	FUSELAGE INTERIOR	REFERENCE
18	**Pax Recovery Plan.** Each certificate holder conducting domestic or flag operations must show that it has an approved system for obtaining, maintaining, and distributing to appropriate personnel current aeronautical data for each airport it uses to ensure a safe operation at that airport. The aeronautical data must include the following: • Airports, • Facilities, and • Public Protection. After February 15, 2008, for Extended Operations (ETOPS) beyond 180 minutes or operations in the North Polar area and South Polar area, this includes facilities at each airport or in the immediate area sufficient to protect the passengers from the elements and to see to their welfare. AC 120-42 states: "A minimum of two cold weather anti-exposure suits must be on board each airplane, so that outside coordination at a diversion airport with extreme climatic conditions can be accomplished safely. A short term MEL relief for this item may be granted provided the certificate holder has arranged ground support provisions for providing such protective clothing at alternate airports. The FAA may also relieve the certificate holder from this requirement during those periods of the year when the seasonal temperature makes the equipment unnecessary." The passenger recovery plan is approved in operations specification (OpSpec) B055 and states that airplanes are to be equipped with a minimum of two cold weather anti-exposure suits.	§§ 121.97 and 121.135 AC 120-42, Extended Operations (ETOPS and Polar Operations) (current edition) OpSpecs B055, North Polar Operations
19	**Emergency Equipment for Extended Overwater Operations/Uninhabited Terrain Areas.** Ensure the following for each item of emergency and flotation equipment: **a.** Is regularly inspected in accordance with inspection periods established in the OpSpecs to ensure its condition for continued serviceability and immediate readiness to perform its intended emergency purposes. **b.** Is readily accessible to the crew, and regarding equipment located in the passenger compartment, to passengers. **c.** Is clearly identified and marked to indicate its method of operation. **d.** Is stored in a compartment or container marked as to its contents. The compartment, container, or the item must indicate date of last inspection.	§§ 121.309, 121.339, and 121.353 AC 120-47, Survival Equipment for Use in Overwater Operations (current edition)

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ITEM	FUSELAGE INTERIOR	REFERENCE
	Life Preservers. Ensure that the aircraft is equipped with an approved flotation means for each occupant. Each life preserver must: **a.** Be equipped with an approved survivor locator light. **b.** Be readily removable from the airplane.	§ 91.509 § 121.339 AC 120-47
	Life Rafts. Ensure the aircraft is equipped with enough life rafts of a rated capacity to accommodate the occupants of the airplane. **a.** Ensure the rafts have approved survivor locator lights. **b.** Ensure that the total capacity of the equipped rafts will accommodate all the passengers of the airplane in the event there is a loss of one raft with the largest capacity. NOTE: Life raft—Deviation allowed with OpSpec A13.	§ 121.339 AC 120-47
	Survival Kits. Must be attached to each required life raft.	§ 91.509 §§ 121.339 and 121.353 AC 120-47
	Pyrotechnic Signaling Device. Ensure there is at least one device for each life raft. Uninhabited terrain: suitable pyrotechnic devices.	§ 91.509 §§ 121.339 and 121.353 AC 120-47
	Survival Emergency Locator Transmitters (ELT). **a.** Check for proper approval. **b.** Check for the expiration date. **c.** Refer to §§ 121.339 and 121.353 for battery information.	§ 91.509 §§ 121.339 and 121.353 AC 120-47
20	**Oxygen Equipment and Supply (Drop-Down Oxygen Masks).** Verify: **a.** Oxygen pressure vessel inspections comply with the Department of Transportation (DOT) (if applicable). **b.** Continuous flow oxygen mask assemblies meet the requirements of Technical Standard Order (TSO)-C64b, Passenger Oxygen Mask Assembly, Continuous Flow. **c.** Demand-type oxygen regulators meet the requirements of TSO-C89a, Crewmember Oxygen Regulators, Demand.	§ 91.211 § 121.333 TSO-C64b TSO-C89a, Crewmember Oxygen Regulators, Demand

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ITEM	FUSELAGE INTERIOR	REFERENCE
	d. Hydrostatic test dates of all fixed oxygen bottles (if applicable). **e.** Aircraft documents properly describe distribution of the oxygen masks in the passenger compartment, ensuring that the quantity of oxygen masks exceeds the number of seats by at least 10 percent. **f.** The 10 percent of extra oxygen masks are uniformly distributed throughout the cabin. **g.** Each lavatory oxygen-dispensing unit is equipped with two oxygen masks. **h.** Each lavatory oxygen-dispensing unit above the flight attendant (F/A) jump seats is equipped with two oxygen masks. Since flightcrews have been made aware of AD 2011-04-09 by the actions in the individual notices and these procedures were to be applied for a limited time (30 days) only, the procedures are no longer considered necessary and are not included in this AD. Flightcrews are still made aware of corrective actions taken as a result of this AD since maintenance activities are recorded and available to the flightcrew using existing maintenance procedures. NOTE: Flightcrews are made aware of corrective actions taken as a result of an airplane lavatory(ies) modified by AD 2011-04-09, since maintenance activities are recorded and available to the flightcrew using existing maintenance procedures. **i.** All oxygen masks are designed to cover the nose and mouth, and are equipped with a means to secure the mask to a person's face.	
21	**Emergency Equipment.** Check to ensure that each item of emergency and flotation equipment listed below: **a.** Is readily accessible to the crew, and, regarding equipment located in the passenger compartment, to passengers. **b.** Is clearly identified and clearly marked to indicate its method of operation. **c.** Is in a compartment or container marked as to its contents; and the compartment, container, or the item, must indicate the date of last inspection. **d.** Meets preflight requirements per the F/A manual and/or the Flight Operations Manual (FOM), as applicable.	§ 91.513 § 121.309
	Portable Oxygen Bottles (POB). Check:	§§ 121.329 and 121.333

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ITEM	FUSELAGE INTERIOR	REFERENCE
	a. That the required number(s) of POBs are on board and that the POBs provide oxygen flow of at least 4 liters per minute, but not less than 2 liters per minute. **b.** That each POB has its own mask and tubing, and that the crew can determine if oxygen is being delivered. **c.** That the continuous flow oxygen mask assemblies meet the requirements of TSO-C64b. **d.** That the oxygen pressure vessel inspections comply with the DOT. **e.** The hydrostatic test dates.	
	Flotation Devices (Non-extended Overwater Operations). Verify that: **a.** The aircraft is equipped with an approved (TSO-C72c, Individual Flotation Devices) flotation means for each occupant (includes lap children). **b.** The flotation means are within easy reach of each seated occupant. **c.** The flotation means are readily removable from the airplane.	§ 121.340 AC 20-56, Marking of TSO-C72b Individual Flotation Devices (current edition)
	Hand Fire Extinguishers. **a.** Ensure that each extinguisher is an approved type, and that the type and quantity of extinguishing agent is the most suitable for the kinds of fires that are likely to occur in the compartment. **b.** Check the extinguishers to ensure they meet the preflight requirements in the F/A manual or FOM. **Passenger Compartment.** **a.** Ensure that fire extinguishers are conveniently located. If more than two are installed, ensure uniform distribution. **b.** For the required quantities of extinguishers, refer to § 121.309(c)(5). **c.** Ensure that at least one extinguisher contains Halon 1211 or equivalent. **Galley Compartments.** Ensure that at least one hand fire extinguisher is conveniently located and easily accessible for use in the galley.	§ 91.513 § 121.309 Volume 6, Chapter 2, Section 4
	Megaphones. Ensure that the aircraft is equipped with one megaphone for more than 60 passengers and two for more than 99 passengers. Ensure that each is properly secured.	§ 91.513 § 121.309

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ITEM	FUSELAGE INTERIOR	REFERENCE
		Volume 6, Chapter 2, Section 4
	Portable Lights. Ensure that the aircraft is equipped with a flashlight stowage provision that is accessible from each F/A seat.	§ 121.310
	Protective Breathing Equipment (PBE). **a.** If there is a Class A, B, or E cargo compartment, ensure that PBE is installed for the use of appropriate crewmembers. **b.** Ensure that PBE is installed in each isolated, separate compartment in the airplane, including upper and lower lobe galleys, in which crewmember occupancy is permitted during flight for the maximum number of crewmembers expected to be in the area during any operation. Refer to § 25.1439 for requirements. **c.** Ensure the PBE meets the requirements of TSO-C99a, Flight Deck (Sedentary) Crewmember Protective Breathing Equipment. **d.** Ensure the PBE meets the preflight requirement in the F/A manual or FOM (refer to § 121.337(c)). Ensure the PBE is within 3 feet of the required fire extinguisher(s) (refer to § 121.337(b)(9)).	§ 25.1439 § 121.337(c) Volume 6, Chapter 2, Section 4
22	**Emergency Medical Equipment.** **First Aid Kits.** **a.** Ensure the minimum number of first aid kits are on board (refer to part 121 appendix A for requirements). **b.** Ensure the first aid kits meet the contents that are required by part 121 appendix A. **c.** Ensure that the first aid kits meet the preflight requirements in the F/A manual or FOM. NOTE: Arm and leg splints may not fit in the first aid kit. They are to be stowed in a readily accessible location that is near the kit.	§ 91.513 § 121.803 Part 121 appendix A Volume 6, Chapter 2, Section 4 AC 121-33, Emergency Medical Equipment (current edition)
	Emergency Medical Kit. **a.** Ensure that the emergency medical kit meets the content requirements of part 121 appendix A. If all of the required items do not fit into one container, then more than one container may be used. **b.** Ensure that it meets the preflight requirements as set forth in the F/A manual or FOM.	§ 121.803 Part 121 appendix A Volume 6, Chapter 2, Section 4 AC 121-33
	Automatic External Defibrillators (AED).	§ 121.803

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ITEM	FUSELAGE INTERIOR	REFERENCE
	a. Ensure that at least one approved AED is stored in the passenger cabin. **b.** Ensure that it meets the preflight requirements in the F/A manual or the FOM. **c.** Ensure that it meets the TSO requirements for power sources, effective April 30, 2005. **d.** Ensure that it is maintained according to the manufacturer's specifications. NOTE: Airplanes with an F/A and a payload of more than 7,500 lbs. must have AEDs.	Part 121 appendix A AC 121-33

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ITEM	FUSELAGE INTERIOR	REFERENCE
23	**Passenger Seats, Berths, Safety Belts, and Harnesses.** Verify that: **a.** Seats do not block the emergency escape exit. **b.** Seats are secure in seat track (random sample). **c.** Seat break-over pressure is in accordance with operator's maintenance program (random sample). **d.** The "Fasten Seatbelt While Seated" placards are viewable from all seats. **e.** Seatbelts have metal-to-metal latches and are in good condition (random sample). **f.** Each seat, berth, safety belt, and harness (if installed) is designed so that a person properly using these devices will not suffer serious injury in an emergency landing. **g.** Each passenger seat or berth is equipped with a safety belt (TSO-C22g, Safety Belts) with a metal-to-metal latching device. **h.** Each seat and berth is normally approved by TSO-C39, 9g Transport Airplane Seats Certified by Static Testing, or other approved methods. For sideward-facing seats, ensure that a safety belt and shoulder harness (TSO-C114, Torso Restraint System) will prevent the head from contacting any object that would injure the person sitting in such a seat. **i.** Each occupant is protected from head injury by a safety belt when there are no objects within head strike range that would cause injury. Ensure a safety belt plus a cushioned rest supports the arms, shoulders, head, and spine. **j.** If the seat backs do not provide a firm handhold, there is a handgrip or rail along each aisle (seat back break-over). **k.** Any projecting object that could cause injury is padded to ensure that people who are seated or moving about the airplane in normal flight will not be injured. **l.** There are no more than three seats on each side of the aisle if the aircraft has a single aisle.	§§ 91.107 and 91.521 §§ 121.311 and 121.317

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ITEM	FUSELAGE INTERIOR	REFERENCE
24	**Cabin Attendant Seats, Berths, Safety Belts, and Harnesses.** Pull the jump seat down to ensure it retracts (those in path of exits). The seats should be positioned so that when not in use, they will not interfere with the use of the passageways and exits. **a.** If applicable, ensure that the jump seat retracts automatically. **b.** Ensure that F/A jump seats are in the passenger compartment near approved floor-level emergency exits, unless another location has been approved. **c.** Ensure that each F/A jump seat position is equipped with a combination shoulder harness and lap belt that has a single-point, metal-to-metal latching system. **d.** Inspect seatbelts for proper approval (e.g., TSO-C22g or equivalent), metal-to-metal latching, and general condition. **e.** Ensure the torso restraint meets the requirements of TSO-C114 or equivalent. **f.** Ensure that the shoulder harness/lap belt has a means to be secured when not in use to prevent rapid egress in an emergency. **g.** Ensure that the F/A, when seated, has a direct view of the cabin that they are responsible for without compromising their proximity to the floor level exit. **h.** Ensure that the F/A jump seats are located in an area that would minimize the probability that the occupants would suffer injury by being struck by items that were dislodged from service areas, stowage compartments, or service equipment. **i.** If the aircraft was manufactured after March 6, 1980, verify that F/A jump seats provide a direct view of the cabin area for which the occupant of each of the seats is responsible. Direct view is defined as a view (without head movement) of at least 50 percent of the entire passenger seating areas, at least 25 percent of any zone, and 100 percent of passenger aisles.	§ 91.521 § 121.311 AC 25.785-1, Flight Attendant Seat and Torso Restraint System Installations (current edition)
25	**Width of Aisle.** Ensure that the width of the aisle at any point between passenger seats meets the requirements of § 25.815.	§ 121.291 Volume 6, Chapter 2, Section 4

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ITEM	FUSELAGE INTERIOR	REFERENCE
26	**Passenger Safety Information Briefing Cards.** While on board the aircraft, perform a random sampling of the passenger briefing cards to ensure its proper distribution, that it is conveniently located for each passenger, and that the card: **a.** Includes information that is pertinent to that type and model of aircraft. **b.** Contains diagrams of and methods of operating the emergency exits. Ensure that the cards concur with the placards located on and/or near the emergency exits. **c.** If applicable, contains instructions necessary for the use of emergency equipment. **d.** Meets all of the requirements of § 121.585(d) and (e) regarding exit row seating. A separate card may have been designed specifically for the exit row seated passengers; ensure that it meets the above listed requirements.	§§ 121.571 and 121.585 Volume 6, Chapter 2, Section 4 AC 121-24, Passenger Safety Information Briefing and Briefing Cards (current edition)
27	**"Fasten Seatbelt" Signs.** Signs that notify when seatbelts should be fastened and that are installed to comply with the operating rules of this chapter must be operable by a member of the flightcrew, and when illuminated, must be legible under all probable conditions of cabin illumination to each person seated in the cabin. Symbols that clearly express the intent of the sign or placard may be used in lieu of letters.	§ 121.317
28	**Doors (Other than Flight Deck).** Lavatory doors must be designed to ensure that no one will become trapped inside, and if equipped with a locking device, it must be capable of being unlocked from the outside without the aid of special tools. If there is a door that separates the passenger cabin from other areas, and it is necessary to pass through the doorway to reach any required emergency exit, the door must have a means to latch it in the open position. The door must be open for each takeoff and landing. If the airplane is equipped with a crew rest area that has separate entries from the flight deck and the passenger compartment, the door between the crew rest area and the passenger compartment must have a locking means.	§ 121.313
29	**Door Placard.** A placard is required on each door that is the means of access to a required passenger emergency exit, to indicate that it must be open during takeoff and landing.	§ 121.313

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ITEM	FUSELAGE INTERIOR	REFERENCE
30	**Emergency Exits.** **a.** Ensure that the number of emergency exits meets or exceeds requirements of the passenger seating configuration. **b.** If applicable, ensure that the step down distance for Type II, III, and IV exits meet § 25.807. **c.** For an airplane that is required to have more than one emergency exit for each side of the fuselage, no passenger exit may be more than 60 feet from any adjacent passenger emergency exit on the same side, same deck, as measured parallel to the airplane's longitudinal axis between the nearest exit edges. **d.** A ventral or tailcone exit must be designed and constructed so that it cannot be opened during flight. It must be marked with a placard that is readable from 30 inches away. The placard must be placed conspicuously near the means for opening the exit; it must state that the exit was designed and constructed so that it cannot be opened during flight. **e.** Passenger compartment emergency exits that are in excess of the minimum number of required emergency exits must be readily accessible and meet all of the applicable provisions of § 121.310(f).	§ 121.310 AC 20-60, Accessibility to Excess Emergency Exits (current edition)
31	**Emergency Evacuation.** Ensure that each crew and passenger area has an emergency means to allow rapid evacuation in crash landings with landing gear extended or retracted. (Refer to § 25.803.) **a.** Passageways that lead to emergency exits must be unobstructed. **b.** There must be adequate space to allow crewmembers(s) to assist in the evacuation of passengers.	§ 121.310

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32	**Emergency Exit Markings.** Verify that: **a.** Each passenger emergency exit, its means of access, and its means of opening must be conspicuously marked. Means must be provided to assist occupants in locating exits in conditions of dense smoke. **b.** The identity and location of each passenger emergency exit must be recognizable from a distance equal to the width of the cabin. **c.** A sign visible to occupants approaching along the main aisle must indicate the location of each emergency exit. **d.** There must be a locating sign: 1) Above the aisle near each over-the-wing passenger emergency exit, or at another ceiling location if it is more practical because of low headroom. 2) Next to each floor-level passenger emergency exit (one sign may serve two exits if both can be readily seen from the sign). 3) On each bulkhead or divider that prevents fore and aft vision along the passenger cabin (if this is not possible, the sign may be placed at another appropriate location). **e.** Each passenger emergency exit locator sign and each passenger emergency exit marking sign must have red letters at least 1½ inches high on an illuminated white background. NOTE: The above colors can be reversed. **Emergency Exit Operating Handles.** **a.** For an aircraft in which the type certification (TC) was filed before May 1, 1972, the location of each passenger emergency exit operating handle, and instructions for opening the exit, must be shown by a marking on or near the exit that is readable from 30 inches away. **b.** For Type I and II emergency exits with a locking mechanism released by rotary motion of the handle, the instructions must be shown by: 1) A red arrow with a shaft at least ¾ inch wide and a head twice the width of the shaft. 2) The word “open” in red letters, 1 inch tall, placed horizontally near the head of the arrow. **c.** Each Type A, Type B, Type C, Type I, or Type II passenger emergency exit operating handle must be self-illuminated or be conspicuously located and well illuminated by the emergency lighting even in conditions of occupant crowding at the exit. Type III exits must be placarded with the weight of the exit and indicating an appropriate location to place the hatch after removal.	§ 121.310

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ITEM	FUSELAGE INTERIOR	REFERENCE
33	**Emergency Lighting.** **a.** Inspect the interior and exterior emergency lighting and escape path markings to the applicable airworthiness and operating rules, and to its approved configuration (STC, TC, etc.). **b.** Verify the system is designed so that each light is manually operable, both from the flight deck and from a point in the passenger cabin that is readily accessible to the F/A seat. **c.** The lights must be safeguarded to prevent inadvertent operation. **d.** Verify that each light has a flight deck control device that has an "on," "off," and "armed" position. **e.** There must be a flightcrew warning light that illuminates when power is on in the airplane and the emergency lighting control device is not armed. Ensure that the system, when activated, illuminates each passenger exit marking and locating sign, and includes floor proximity lighting emergency escape path markings that meet the requirements of § 25.812.	§ 121.310 AC 25.812-1, Floor Proximity Emergency Escape Path Marking (current edition) AC 25.812-2, Floor Proximity Emergency Escape Path Marking Systems Incorporating Photoluminescent Elements (current edition)
34	**Emergency Evacuation Assist Means.** Verify that each exit (other than over-wing exits) that is higher than 6 feet from the ground has an approved means to assist the occupants to the ground (slides, ramp/slides, etc.). For floor-level exits, verify that: **a.** Slide-bottle pressures are within acceptable levels. **b.** Slide containers are properly marked for content (as applicable). **c.** Slides meet the requirements of TSO-C69c, Emergency Evacuation Slides, Ramps, Ramp/Slides, and Slide/Rafts.	§ 25.810 § 121.310

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ITEM	FUSELAGE INTERIOR	REFERENCE
35	**Lavatory Fire Protection.** The following is excerpted from § 121.308(a) and (b): "…no person may operate a passenger-carrying airplane unless each lavatory in the airplane is equipped with a smoke detector system or equivalent that provides a warning light in the cockpit or provides a warning light or audio warning in the passenger cabin which would be readily detected by a flight attendant, taking into consideration the positioning of flight attendants throughout the passenger compartment during various phases of flight. "…each lavatory in the airplane is equipped with a built-in fire extinguisher for each disposal receptacle for towels, paper, or waste located within the lavatory. The built-in fire extinguisher must be designed to discharge automatically into each disposal receptacle upon occurrence of a fire in the receptacle."	§ 121.308
36	**Crewmember Interphone System.** For airplanes with a seating capacity for more than 19 passengers, verify the installation of a crewmember interphone system that meets the requirements of the applicable airworthiness and operating rules.	§ 121.319
37	**Public Address (PA) System.** For airplanes with a seating capacity for more than 19 passengers, verify installation of an approved (14 CFR part 21, § 21.305) PA system that meets the requirements of the applicable airworthiness and operating rules.	§ 121.318
38	**Automatic Type Emergency Locator Transmitter (ELT).** Verify that the unit is approved (e.g., TSO-C91a, Emergency Locator Transmitter (ELT) Equipment, or later-issued TSOs or equivalent for ELTs) and properly installed for those operations not exempt from the applicable operating rule. For new installations after June 21, 1995, the installed unit may not have been approved under TSO-C91a.	§§ 91.205 and 91.207

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Table 10-9-1G. Flight Deck

ITEM	FLIGHT DECK	REFERENCE
1	**Two-Way Radio Communications Systems.** For 14 CFR part 25 aircraft, verify the installation of two complete two-way radio communications systems, with controls for each accessible from each pilot station, designed and installed so that failure of one system will not preclude operation of the other system. The systems must include two microphones and two headsets (or one headset and one speaker). For non-part 25 aircraft, verify that the installation meets the basic requirements for at least one complete radio communications system for instrument flight rules (IFR) operations. For overwater and extended overwater operations, two complete communication systems must be installed. Those systems must include two microphones and two headsets (or one headset and one speaker). For extended overwater operations, the two systems must be independent.	14 CFR part 91, §§ 91.205 and 91.511 14 CFR part 121, §§ 121.345, 121.347, and 121.349
2	**Two-Way Radio Communications System (or Other Means of Communication Approved by the Administrator).** For communications between each airplane and the appropriate dispatch office, and between each airplane and the appropriate air traffic control (ATC) unit, except as specified in § 121.351(c). Determine the certificate holder's method of compliance with § 121.99. Based on that determination, ensure that the necessary equipment is properly approved and installed in the subject aircraft.	§§ 121.99 and 121.351
3	**Radio Navigation Systems.** For part 25 aircraft, verify the installation of two-radio navigation systems, with controls for each accessible from each pilot station, designed and installed so that failure of one system will not preclude operation of the other system. Notwithstanding the above, for all aircraft, verify the installation of the equipment required by the referenced operating rules and the operations specifications (OpSpecs) for specific operational approvals.	§§ 91.205 and 91.511 §§ 121.345, 121.347, 121.349, 121.351, and 121.355 Part 121 appendix G

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4	**Collision Avoidance System.** **a.** Turbine-powered airplanes of more than 33,000 lb maximum certificated takeoff weight must be equipped with an appropriate class of Mode Select (Mode S) transponder that meets Technical Standard Order (TSO)-C112, Air Traffic Control Radar Beacon System/Mode Select (ATCRBS/Mode S) Airborne Equipment, or a later revision, and one of the following approved units: 1) Traffic Alert and Collision Avoidance System (TCAS) II that meets TSO-C119b, Traffic Alert and Collision Avoidance System (TCAS) Airborne Equipment, TCAS II, version 7.0, or a later version. 2) TCAS II that meets TSO-C119a, Traffic Alert and Collision Avoidance System (TCAS) Airborne Equipment, TCAS II, version 6.04A Enhanced, that was installed in that airplane before May 1, 2003. If that TCAS II (version 6.04A Enhanced) no longer can be repaired to TSO-C119a standards, it must be replaced with a TCAS II that meets TSO-C119b (version 7.0) or a later version. 3) A collision avoidance system equivalent to TSO-C119b (version 7.0), or a later version, capable of coordinating with units that meet TSO-C119a (version 6.04A Enhanced), or a later version. **b.** Passenger or combination cargo/passenger airplanes that have a passenger seat configuration of 10–30 seats must be equipped with either: 1) TCAS I that meets TSO-C118, Traffic Alert and Collision Avoidance System (TCAS) Airborne Equipment, TCAS I, or a later version; 2) A collision avoidance system that has a TSO-C118, or a later version; or 3) A collision avoidance system and Mode S transponder that meet subparagraph 10-9-1-5A.1). **c.** Piston-powered airplanes of more than 33,000 lb maximum certificated takeoff weight must be equipped with one of the following: 1) TCAS I that meets TSO-C118 (or a later version). 2) A collision avoidance system equivalent to maximum TSO-C118 (or a later version). 3) A collision avoidance system and Mode S transponder that meet TSO-C112 (or a later version) and one of the following approved units: a) TCAS II that meets TSO-C119b (version 7.0), or a later version. b) TCAS II that meets TSO-C119a (version 6.04A Enhanced) that was installed in that airplane before May 1, 2003. If that TCAS II (version 6.04A Enhanced) can no longer be repaired to	§ 91.221 § 121.356

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ITEM	FLIGHT DECK	REFERENCE
	TSO-C119a standards, it must be replaced with a TCAS II that meets TSO-C119b (version 7.0), or a later version. c) A collision avoidance system equivalent to TSO-C119b (version 7.0), or a later version, capable of coordinating with units that meet TSO-C119a (version 6.04A Enhanced), or a later version.	
5	**ATC Transponder.** Verify that the installation of a transponder that meets the requirements of § 91.215. If installed on or before January 1, 1992, the transponder must meet TSO-C74b, Airborne ATC Transponder Equipment; TSO-C74c, Airborne ATC Transponder Equipment, as appropriate (provided that the equipment was manufactured before January 1, 1990); or the appropriate class of TSO-C112 (Mode S). If installed after January 1, 1992, the transponder must be the appropriate class of TSO-C112 (Mode S). NOTE: "Installation" does not include temporary installation of TSO-C74b or TSO-C74c (as appropriate) substitute equipment during maintenance of the permanent equipment, reinstallation of equipment after temporary removal for maintenance, or for fleet operations, installation of equipment in a fleet aircraft after removal of the equipment for maintenance from another aircraft in the same operator's fleet.	§ 91.215 § 121.345
6	**Airborne Weather Radar System.** Persons may not operate any transport category airplanes (except the C-46 type), and nontransport category airplanes certificated after December 31, 1964, unless approved airborne weather radar equipment has been installed in the airplane.	§ 121.357

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ITEM	FLIGHT DECK	REFERENCE
7	**Low-Altitude Wind Shear System.** **a.** Except for turbopropeller-powered airplanes, all turbine-powered airplanes manufactured after January 2, 1991, must be equipped with either an approved airborne wind shear warning and flight guidance system, an approved airborne detection and avoidance system, or an approved combination of these systems. **b.** The following aircraft must be equipped with either an approved airborne wind shear warning and flight guidance system, an approved airborne detection and avoidance system, or an approved combination of these systems: A-300-600; A-310; A-320; B-737-300, 400, and 500; B-747-400; B-757; B-767; F-100; MD-11; and MD-80 series equipped with an electronic flight instrument system (EFIS) and Honeywell-970 digital flight guidance computer. All other turbine-powered airplanes must be equipped with at least an approved airborne wind shear warning system. These airplanes may be equipped with an approved airborne wind shear detection and avoidance system or an approved combination of these systems.	§ 121.358
8	**Ground Proximity Warning (GPW)/Glideslope (GS) Deviation Alerting System.** Verify that turbine-powered airplanes are equipped with a ground proximity warning system (GPWS) that meets the performance and environmental standards of TSO-C92, Ground Proximity Warning—Glide Slope Deviation Alerting Equipment (or incorporates TSO-approved ground proximity warning equipment), and a GPW/GS deviation-alerting system that meets the performance and environmental standards contained in TSO-C92a or TSO-C92b (or incorporates TSO-approved GPW/GS deviation-alerting equipment). If the system is currently deactivated, an entry must have been made in the airplane maintenance record that includes the date and time of deactivation.	§ 121.354
9	**Radio Altimeter.** Verify that the installation meets the requirements of the Airplane Flight Manual (AFM) and approved Category II Approach (CAT II)/Category III Approach (CAT III) program(s), as applicable.	Advisory Circular (AC) 120-28, Criteria for Approval of Category III Weather Minima for Takeoff, Landing and Rollout (current edition) AC 120-29, Criteria for Approval of Category I and Category II Weather Minima for Approach (current edition)

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ITEM	FLIGHT DECK	REFERENCE
10	**Global Positioning System (GPS).** Verify that installations meet appropriate system descriptions, operational procedures, and limitations in the AFM/Airplane Operations Manual (AOM), as applicable. Also verify that the software version meets the AFM/AOM and certificate holder's requirements. Ensure the aircraft conforms to the appropriate approved documents.	AC 20-138, Airworthiness Approval of Positioning and Navigation Systems (current edition)
11	**Terrain Awareness and Warning System (TAWS).** **a.** Verify that all turbine-powered airplanes manufactured after March 29, 2002, are equipped with an FAA-approved TAWS. The installation must also include an approved terrain situational awareness (SA) display. All turbine-powered airplanes manufactured on or before March 29, 2002, must be equipped as described above by March 29, 2005. **b.** Verify the installation of proper operational and terrain database software versions, and that the AFM/AOM contains appropriate procedures for use of the system and proper flightcrew reaction in response to the system's audio and visual warnings.	§ 121.354 TSO-C151, Terrain Awareness and Warning System (TAWS)
12	**Instrument Arrangement, Visibility, and Markings.** **a.** Verify the arrangement and visibility of flight and navigation instruments in accordance with the applicable regulations. **b.** Verify that displayed information and ranges are appropriate to the aircraft and the installed equipment. **c.** Verify that when markings are on the cover glass of the instrument, there is a means to maintain the correct alignment of the glass cover with the face of the dial. **d.** Verify appropriate powerplant instrument markings.	§ 91.205 § 121.305
13	**Electronic Flight Information Systems (EFIS) and Electronic Centralized Aircraft Monitoring (ECAM).** Verify display/pictures in the book match the aircraft's AFM/AOM and current software configuration/revision date.	AC 25-11, Electronic Flight Displays (current edition)

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14	**Instrument Requirements.** **a. Airspeed Indicating System.** Verify the installation of an approved instrument at each pilot station that is calibrated in knots, and that each airspeed limitation and item of related information in the AFM and pertinent placards are expressed in knots. The system must include a heated pitot tube or equivalent means for preventing malfunctioning due to icing, and must meet all pertinent airworthiness standards. **b. Sensitive Altimeter.** Verify installation of an approved instrument at each pilot station. The instruments must be adjustable for barometric pressure. **c. Sweep-Second Hand Clock.** Verify the installation of an approved clock displaying hours, minutes, and seconds with a sweep-second pointer, digital presentation, or approved equivalent. **d. Standby Horizon Additional Attitude Instrument.** Verify that, if required by § 121.305(j), an additional approved third such instrument is installed in accordance with § 121.305(k). **e. Gyroscopic Bank and Pitch Indicator (Artificial Horizon, Attitude Indicator, etc.).** Verify the installation of an approved instrument at each pilot station. **f. Free Air Temperature Indicator.** Verify the installation of an approved free air temperature indicator or an air temperature indicator that provides indications that are convertible to free air temperature. **g. Gyroscopic Rate-of-Turn Indicator.** Verify that the installation of an approved instrument at each pilot station is combined with an integral slip/skid indicator (turn and bank indicator), except that only slip/skid indicators are required when a third attitude instrument system is installed in accordance with § 121.305(k). **h. Gyroscopic Direction Indicator.** Verify the installation of an approved directional gyro, or equivalent, at each pilot station. **i. Vertical Speed (Rate of Climb) Indicator.** Verify the installation of approved instruments at each pilot station. **j. Magnetic Compass.** Verify the installation of an approved instrument that is visible from each pilot station and that is lighted during night operations. On or near the instrument must be a placard that: 1) Shows calibration of the instrument in level flight with the engines operating. 2) States whether the calibration was made with radio receivers on or off.	§§ 91.205, 91.217, and 91.219 §§ 121.303, 121.305, 121.313, 121.323, and 121.325

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ITEM	FLIGHT DECK	REFERENCE
	3) Displays magnetic heading calibration readings, in not more than 45° increments for part 25 aircraft, or 30° increments for 14 CFR part 23 aircraft. 4) For part 23 aircraft, and except as provided by part 23, § 23.1547, the placard must not reflect maximum deviations of more than 10°. 5) When a means is provided for transferring an instrument from its primary operating system to an alternate system, the means must include a positive positioning control and must be marked to indicate clearly which system is being used. 6) The following is excerpted from § 91.219: "No person may operate a turbojet-powered, U.S.-registered civil airplane unless that airplane is equipped with an approved altitude alerting system."	
15	**Speed Warning Device.** Verify installation on turbine engine-powered airplanes, and airplanes with a maximum operating limit speed (V_{MO}/M_{MO}) greater than 0.8 demonstrated flight diving speed (V_{DF}/M_{DF}) or 0.8 V_{DF}/M_{DF}. The speed warning device must give effective aural warning (differing distinctively from aural warnings used for other purposes) to the pilots, whenever the speed exceeds V_{MO} plus 6 knots or M_{MO} plus 0.01. The upper limit of the production tolerance for the warning device may not exceed the prescribed warning speed.	§ 91.603
16	**Automatic Pilot System.** Verify that indicators and controls meet applicable airworthiness standards, including the requirement that quick release (emergency) controls must be on both control wheels, on the side of each wheel opposite the throttles. Verify that the AFM (and certificate holder's AOM, if applicable) show minimum altitude for use of autopilot. NOTE: If the certificate holder is authorized for CAT II or CAT III operations, the aircraft autopilot can be used for lower altitudes when approved by OpSpecs.	§ 121.579
17	**Instrument Lighting.** Verify that instrument lights provide enough light to make each required instrument, switch, or similar instrument easily readable and installed so that the direct rays are shielded from flightcrew members' eyes and that no objectionable reflections are visible to them. There must be a means of controlling the intensity of illumination unless it is shown that non-dimming instrument lights are satisfactory.	§§ 121.323(d) and 121.325(c)

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ITEM	FLIGHT DECK	REFERENCE
18	**Pitot Heat Indication Systems.** Verify that the indication system incorporates an amber light that is in clear view of a flightcrew and that is designed to alert the flightcrew if the pitot heating system is switched *off*, or the pitot heating system is switched *on*, and any pitot tube heating element is inoperative.	§ 121.342
19	**Required Powerplant Instruments.** Verify the installation of approved instruments as listed below: **a.** Fuel pressure indicator for each engine and either an independent fuel pressure warning device for each engine, or a master warning device for all engines with a means for isolating the individual warning circuits from the master warning device. **b.** Fuel flow indicator for each engine not equipped with an automatic altitude mixture control. **c.** Fuel quantity indicator for each fuel tank to be used. **d.** Oil pressure indicator for each engine. **e.** Oil quantity indicator for each oil tank. NOTE: Indicator may not always be located on the flight deck. **f.** Oil temperature indicator for each engine. **g.** Oil pressure warning means for each engine. **h.** Tachometer for each engine. For turbine engine-powered aircraft, the indicators must display speed rotors (i.e., N1, N2, N3) that have established limiting speeds. **i.** Augmentation liquid quantity indicator for each tank (if applicable). **j.** An approved means to ensure prompt detection of a fire in designated fire zones (engine or auxiliary power unit (APU) compartments for parts 23 and 25 aircraft). There must also be a means to allow the crew to check, in-flight, the functioning of each fire detector electric circuit. **k.** Reverse pitch indication for each reversible propeller (if applicable). **l.** Gas temperature (e.g., exhaust gas temperature (EGT)) indicator for each turbine engine (if applicable). **m.** Engine starter indication for each turbine engine-powered part 25 aircraft (if applicable). **n.** Ice protection system indication for each turbine engine (if applicable).	§ 91.205 § 121.307

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ITEM	FLIGHT DECK	REFERENCE
	o. Fuel filter bypass indication for each turbine engine (if applicable). **p.** Oil strainer or filter warning indication for each turbine engine (if no bypass is installed) to warn the flightcrew of the occurrence of contamination of the strainer or filter before it reaches maximum capacity (if applicable). **q.** A means to indicate proper functioning of any heater(s) used to prevent ice clogging of fuel system components. **r.** Thrust (or directly related (e.g., N1)) indicator for each turbojet or turbofan engine (if applicable). **s.** Thrust reversing indicator for each engine using a thrust-reversing device, to indicate to the flightcrew when the thrust-reversing device is in the reverse thrust position (if applicable). **t.** Rotor system unbalance indicator for part 25 turbojet-powered aircraft (if applicable). **u.** Torque indication for each turbine propeller-powered aircraft engine (if applicable). **v.** Propeller position indication for each propeller of turbopropeller-powered aircraft (if applicable). For airplanes equipped with fluid systems (other than fuel) for thrust or power augmentation, an approved means must be provided to indicate to the flightcrew the proper functioning of that system, if applicable. **w.** For part 23 turbine-engine-powered aircraft, a fuel low level warning means for any fuel tank that should not be depleted of fuel in normal operations (if applicable). **x.** Carburetor air temperature indicator. **y.** For air-cooled engines, a cylinder head temperature indicator for each engine.	
20	**Takeoff Warning System.** Verify the installation of a takeoff warning system.	§ 25.703 § 121.293

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ITEM	FLIGHT DECK	REFERENCE
21	**Landing Gear Aural Warning Device.** The following is excerpted from § 121.289(a)(1) and (2): "(a) Except for airplanes that comply with the requirements of § 25.729 of this chapter on or after January 6, 1992, each airplane must have a landing gear aural warning device that functions continuously under the following conditions: (1) For airplanes with an established approach wing-flap position, whenever the wing flaps are extended beyond the maximum certificated approach climb configuration position in the Airplane Flight Manual and the landing gear is not fully extended and locked. (2) For airplanes without an established approach climb wing-flap position, whenever the wing flaps are extended beyond the position at which landing gear extension is normally performed and the landing gear is not fully extended and locked."	§ 121.289
22	**Flight Deck Inspection.** Inspect the flight deck for cleanliness, poor condition, loose/missing equipment, deterioration, breakage, leakage, corrosion, proper installation, and other indications of defects. Pay particular attention to windshields, windows, paneling, flooring, controls, lighting, and wiring installations.	§ 121.153
23	**Flight Deck Interiors/Fire Resistance.** Examine seat dress cover assemblies for meeting the flammability requirements of § 25.853(a). Review documentation of flame testing (the current edition of AC 25.853-1, Flammability Requirements for Aircraft Seat Cushions).	§§ 121.215 and 121.312
24	**Flightcrew Emergency Exits.** For airplanes in which the proximity of passenger emergency exits to the flightcrew area does not offer a convenient and readily accessible means of evacuation for the flightcrew, and for all airplanes having a passenger-seating capacity greater than 20: **a.** Verify that flightcrew exits are located in the flightcrew area. **b.** Verify that such exits are of sufficient size and are located to permit rapid evacuation by the crew. One exit must be provided on each side of the airplane, or a top hatch may be provided. Each exit must encompass an unobstructed rectangular opening of at least 19 by 20 inches unless satisfactory exit utility can be demonstrated by a typical crewmember.	§ 121.221

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ITEM	FLIGHT DECK	REFERENCE
25	**Emergency Equipment.** Verify that each item of emergency and flotation equipment meet the following requirements: **a.** Be inspected regularly in accordance with inspection periods established in the OpSpecs to ensure its condition for continued serviceability and immediate readiness to perform its intended duty. **b.** Be readily accessible to the crew. **c.** Be clearly identified and marked to indicate its method of operation. **d.** When carried in a compartment or container, be carried in a compartment or container marked as to contents. The compartment or container, or the item itself, must be marked as to date of last inspection.	§§ 121.221 and 121.309
26	**Medical Kit (if Located on Flight Deck).** See the requirements of Table 10-9-1F, Fuselage Interior, Item 22.	§ 121.803 Part 121 appendix A
27	**Hand Fire Extinguishers for Flightcrew.** Verify that at least one hand fire extinguisher is conveniently located on the flight deck for use by the flightcrew. The type and quantity of extinguishing agent must be suitable for the kinds of fires likely to occur in the compartment where the extinguisher is intended to be used. Check for fire extinguisher security, pressure, hydrostatic test dates, and seal.	§ 121.309 Part 121 appendix A AC 20-42, Hand Fire Extinguishers for Use in Aircraft (current edition)
28	**Protective Breathing Equipment (PBE).** The following is excerpted from § 121.337(b)(1): "The equipment must protect the flightcrew from the effects of smoke, carbon dioxide or other harmful gases or an oxygen deficient environment caused by other than an airplane depressurization while on flight deck duty and must protect crewmembers from the above effects while combatting fires on board the airplane." The following is excerpted from § 121.337(b)(9)(i) and (ii): "(i) One PBE is required for each hand fire extinguisher located for use in a galley other than a galley located in a passenger, cargo, or crew compartment. "(ii) One on the flight deck, except that the Administrator may authorize another location for this PBE if special circumstances exist that make compliance impractical and the proposed deviation would provide an equivalent level of safety."	§ 121.337

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ITEM	FLIGHT DECK	REFERENCE
29	**Oxygen Equipment and Supply.** **a.** Verify that the aircraft is equipped with oxygen equipment per §§ 25.1441 through 25.1453. **b.** Oxygen/fire extinguisher pressure vessel inspections must comply with Title 49 of the Code of Federal Regulations (49 CFR) part 180, § 180.205, Department of Transportation (DOT), or United States Coast Guard (USCG) requirements. **c.** Check all portable and fixed oxygen bottles and fire bottles for hydrostatic test dates.	§ 91.211 §§ 121.309, 121.329, 121.333, and 121.574
30	**Seats, Berths, Safety Belts, and Harnesses.** Verify that each seat at a flight deck station has a restraint system consisting of a combined safety belt and shoulder harness with a single-point release that permits the flight deck occupant, when seated with the restraint system fastened, to perform all of the necessary flight deck functions.	§ 91.521 § 121.311
31	**Approved Flight Deck Check Procedures Checklist.** Verify that approved procedures include each item necessary for flightcrew members to check for safety before starting engines, taking off, or landing, and in engine and systems emergencies.	§ 121.315
32	**Observer Seat.** Verify installation, security, and condition of flight deck observer seat and all required peripheral equipment.	§ 121.581
33	**Placards.** Verify that manufacturer-required placards are installed. Refer to chapter 11 of the Aircraft Maintenance Manual (AMM) for data. All placards required by either the approved AFM, the applicable operating rules, operators' placard manual, or the certification basis must be installed in the airplane. Refer to the Type Certificate Data Sheet (TCDS), Supplemental Type Certificates (STC), the current edition of AC 20-88, Guidelines on the Marking of Aircraft, and the AMM.	§ 121.310
34	**Windshield Wiper.** Verify installation or equivalent for each pilot station.	§ 121.313

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ITEM	FLIGHT DECK	REFERENCE
35	**Pilot Compartment Doors.** Verify the following requirements for a lockable door that must be installed between the pilot compartment and the passenger compartment: **a.** The emergency exit configuration must be designed so that neither crewmembers nor passengers need to use that door to reach the emergency exits provided for them. **b.** Means must be provided to enable flightcrew members to directly enter the passenger compartment from the pilot compartment if the flight deck door becomes jammed. In any case where internal doors are equipped with louvers or other ventilating means, there must be a means convenient to the crew for closing the flow of air through the door when necessary. **c.** The following is an excerpt from § 121.313(f): "A door between the passenger and pilot compartments (i.e., flight deck door), with a locking means to prevent passengers from opening it without the pilot's permission, except that nontransport category airplanes certificated after December 31, 1964, are not required to comply with this paragraph. For airplanes equipped with a crew rest area having separate entries from the flight deck and the passenger compartment, a door with such a locking means must be provided between the crew rest area and the passenger compartment." **d.** The following is an excerpt from § 121.313(j)(1)(i): "Each such door must meet the requirements of § 25.795(a)(1) and (2) in effect on January 15, 2002."	§§ 121.217, 121.219, and 121.313
36	**Portable Electronic Devices (PED) and Electronic Flight Bags (EFB).** **a.** Verify that the certificate holder has properly determined that permitted PEDs and/or EFBs will not cause interference with the navigation and communication systems of the subject aircraft. **b.** Verify that the software version meets the AFM/AOM and certificate holder's requirements. Refer to the current edition of AC 120-76, Guidelines for the Certification, Airworthiness, and Operational Use of Electronic Flight Bags.	§ 121.306

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ITEM	FLIGHT DECK	REFERENCE
37	**Protective Fuses.** If protective fuses are installed on the airplane, the certificate holder's manual must describe the number of spare fuses approved for that airplane.	§ 91.205 § 121.313 AC 25-16, Electronic Fault and Fire Prevention and Protection (current edition) AC 25.1357-1, Circuit Protective Devices (current edition)
38	**Crash Ax.** Each transport-category airplane must be equipped with a crash ax.	§ 121.309(e)

Table 10-9-1H. Equipment and Cargo Compartments

ITEM	EQUIPMENT AND CARGO COMPARTMENTS	REFERENCE
1	**General Visual Inspection (GVI).** **a.** Check electronic/electrical components including wiring and connectors for condition, proper bonding, and security. **b.** Check that wiring is properly grouped, bundled, routed, and secured to airframe structure. **c.** Check with the current aircraft equipment list for installed equipment. **d.** Check for metal shavings or other debris that can cause electrical shorts and fire. **e.** Check the exposed airframe structure (forward pressure bulkhead, if accessible) for general condition, corrosion inhibiting compound (CIC) application, and evidence of fluid leaks and damage. **f.** Check insulation blankets for condition and liquid saturation. **g.** If repairs are noted to the airframe structure (major repair), verify that the repair data is Federal Aviation Administration (FAA)-approved. **h.** Check that all placards required by the FAA-approved Airplane Flight Manual (AFM), aircraft	14 CFR part 43, § 43.13(c), and part 121, §§ 121.221, 121.223, 121.312, 121.313, 121.314, and 121.369 Volume 6, Chapter 2, Section 4 Advisory Circular (AC) 43-206, Inspection, Prevention, Control, and Repair of Corrosion on Avionics Equipment (current edition)

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ITEM	EQUIPMENT AND CARGO COMPARTMENTS	REFERENCE
	Type Certificate Data Sheet (TCDS), and applicable operating rules are properly installed at the location specified by those documents. **i.** Check each compartment for general condition and that the flammability requirements of ceiling, sidewall liners, and floor material are met (no holes or tears and seams sealed with approved tape). **j.** Check all visible cables, wiring, hydraulic and fuel lines, and equipment for security and damage. **k.** Verify that the equipment and cargo compartments meet their type design per the TCDS and any changes that have a Supplemental Type Certificate (STC) approved by the FAA and the aircraft is in compliance with that data. **l.** Check that the digital flight data recorder (DFDR) and flight deck voice recorder are protected from any contact with shifting baggage or cargo (when applicable).	
2	**Required Crew Emergency Exits.** **a.** Check that the crew has access to emergency exits under all cargo loading conditions. These emergency exits cannot be located within the "E" cargo compartment. **b.** Check for required placards and markings of the emergency exit(s). **c.** Check aircraft that have two flight deck windows that cannot be opened from the outside, the most forward left main (L1) fuselage door is designated as the required emergency exit. **d.** Depending on the type certificate (TC) or STC, marking and designation of the emergency exits will vary. Some aircraft have designated the flight deck windows as the emergency exit. **e.** On certain aircraft, an overhead hatch may be provided as an emergency exit. **f.** Check that the path from the flight deck to the designated emergency exit is free from obstacles and properly marked.	§§ 121.221 and 121.223 Volume 6, Chapter 2, Sections 4 and 5
3	**Baggage and Cargo Restraint System.**	§§ 121.135, 121.221, 121.223, 121.285, and 121.367

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ITEM	EQUIPMENT AND CARGO COMPARTMENTS	REFERENCE
	a. Perform the configuration evaluation check per the approved or accepted data of the Original Equipment Manufacturer (OEM) or STC holder. **b.** Check that the restraint system meets Technical Standard Order (TSO)-C90, Cargo Pallets, Nets, and Containers, or other approved means as required. **c.** Check that the certificate holder has a maintenance program for its cargo system, including restrain system, pallets, nets, and unit load device (ULD). **d.** Check the existing aircraft baggage and cargo restraint system installation (restrain system, pallets, and nets) for general condition, security, and to verify if they are properly identified to its weight or load limits.	Volume 6, Chapter 2, Sections 4 and 5 AC 25-18, Transport Category Airplanes Modified for Cargo Service (current edition)
4	**Major Alterations of Aircraft Modified to Cargo Freighters (Including Palletized Restraint Systems, Cargo Doors, etc.).** **a.** Check that the certificate holder's aircraft has been modified to a cargo freighter in accordance with an FAA-approved STC. **b.** When other than the STC holder's parts and components are used, verify compliance with approved data obtained from the certificate holder's records repository.	Volume 4, Chapter 9, Section 1 Volume 6, Chapter 2, Sections 5, 36, and 42 AC 120-77, Maintenance and Alteration Data (current edition)
5	**Upper Deck and Cargo Barrier.** Regardless whether the main cabin is used for cargo-only or as a combi, it must be equipped with a forward 9.0g barrier; either a solid bulkhead or net, in compliance with § 25.561, § 121.285, or Civil Aviation Regulation (CAR) 4b.269. **a.** Check the 9G cargo barrier (net or bulkhead) for general condition, fraying, hardware integrity and airframe attachment, and conformity with approved data. **b.** If the aircraft has been converted from a passenger configuration to a cargo-only or a combi through an STC, refer to AC 25-18 for details and verify the records for approved data. Perform the conformity review with this data. **c.** Check for the presence of an FAA Parts Manufacturer Approval (FAA-PMA) tag, and TSO tag if applicable.	§§ 21.31, 121.221, 121.223, 121.285, 121.309, and 121.367 Volume 6, Chapter 2, Sections 4 and 5 AC 20-42, Hand Fire Extinguishers for Use in Aircraft (current edition) AC 20-88, Guidelines on the Marking of Aircraft (current edition) AC 20-168, Certification Guidance for Installation of Non-Essential, Non-Required Aircraft Cabin Systems & Equipment (CS&E) (current edition) AC 21-10, Flight Recorder and Cockpit Voice Recorder

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ITEM	EQUIPMENT AND CARGO COMPARTMENTS	REFERENCE
	d. Check all visible cables, wiring, hydraulic and fuel lines, and equipment for security and damage. **e.** Check that each lamp is adequately shielded to prevent contact between lamp bulb and baggage or cargo. **f.** Check that any heat source is adequately shielded and insulated to prevent igniting the baggage or cargo. **g.** Check for approved hand-held fire extinguishers and if they are available for each class A and E compartment (main deck cargo). **h.** Check that a separate approved smoke or fire detector system is installed to give warning to the pilot or Flight Engineer (FE) and is controllable from the flight deck. **i.** Check if the installed equipment is in compliance with the current aircraft equipment list, including STC requirements. **j.** Check the condition of the smoke curtain (if installed). If a smoke curtain was not installed, check the condition of the flight deck door seals. **k.** Check for livestock carrying freighters for FAA-approved modification data. **l.** Check for a means to prevent cargo or baggage from interfering with the functioning of the fire extinguishing system of the compartment (i.e., a top loading limit marking per the manufacturer's or STC holder's requirement). **m.** Check the cargo doors seals for condition. **n.** Check the condition of the cargo bin or pallet loading system (if installed) such as rollers, tracks, pallet or bin clamps, or other securing devices for condition and operation. **o.** Check if the emergency exit is more than 6 feet off the ground and that a means is provided for the crew and extra supernumeraries (if so equipped) to descend to the ground (e.g., inflatable slide or slide raft, cargo, etc.).	Underwater Locating Devices (current edition) AC 25-16, Electronic Fault and Fire Prevention and Protection (current edition) AC 25-18

10-9-1-7 through 10-9-1-29 RESERVED.

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VOLUME 10 SAFETY ASSURANCE SYSTEM POLICY AND PROCEDURES

CHAPTER 10 THE CERTIFICATE TRANSFER PROCESS

Section 1 Safety Assurance System: Certificate Transfer Process

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 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.

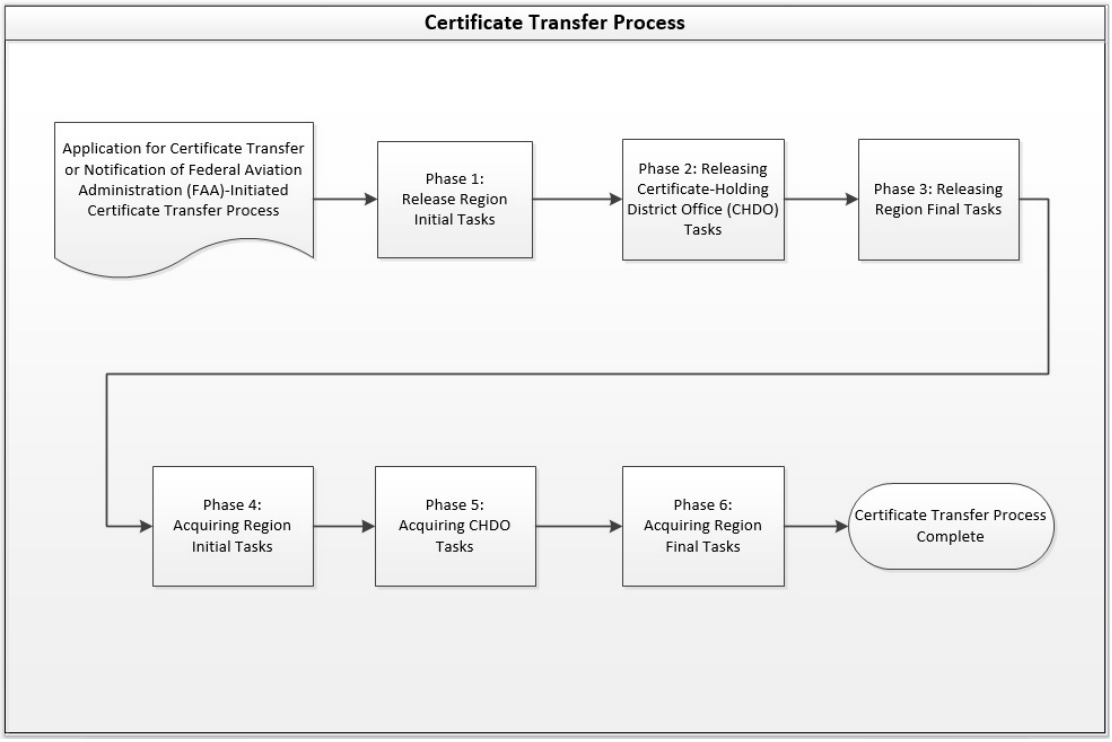
B. Scope. Participants in a certificate transfer must follow this process to complete a certificate transfer when the transfer is not the result of a merger or acquisition. For more information on mergers or acquisitions, see Volume 3, Chapter 34, Section 1.

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



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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.

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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).

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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.

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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.

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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.

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10-10-1-15 JOB AIDS.

Figure 10-10-1B. Certificate Transfer Process Job Aid

Job Aid Start Date:		**Certificate Holder:**
Phase 1—Releasing Regional Flight Standards Division (RFSD) Office Initial Tasks		
Item	Initials/Date or N/A	Details
1		Coordinate with the Director or Deputy Director of Flight Standards Service (AFS) if the transfer will significantly affect Federal Aviation Administration (FAA) resources.
2		If the request is for transfer from a corporate official, enter: Name: Corporate Title: Reason for the Transfer: Proposed Location: Proposed Transfer Date:
3		Notify appropriate division management of the transfer request. Releasing RFSD Manager Person Contacted: Regional Coordinator's Name: Phone Number: Office Address:
4		Initiate certificate transfer file.
5		Contact the acquiring RFSD manager. Person Contacted: Regional Coordinator's Name: Phone Number: Office Address: Identify a transition team and team lead (if appointed). Name:
6		Review certificate holder's transfer plan. Date the RFSD office received the plan: Requested Timeframe for Completion of Transfer:
7		Schedule an initial briefing with the acquiring RFSD office and both certificate-holding district office (CHDO) Office Managers (OM), and establish a corresponding FAA plan to support the releasing and the acquiring CHDOs. Releasing CHDO: Manager's Name and Phone: Office Address: Regional Coordinator's Name: Phone: Point of Contact (POC): Acquiring CHDO: Manager's Name and Phone:

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		Regional Coordinator's Name and Phone: POC:
8		Contact the Flight Standards National Field Office (FSNFO) (AFS-900) for support during the certificate transfer process as necessary. AFS-900 POC:
9		If required, request a National Certificate Holder Evaluation Process (CHEP). Completion Date of National CHEP:
Notes:		
Phase 2—Releasing CHDO Tasks		
Item	Initials/Date or N/A	Details
1		Contact AFS-900 for support during the transfer process (as necessary).
2		Coordinate with the RFSD office on how unresolved issues with the certificate holder are resolved.
3		Ensure principal inspectors (PI) include all appropriate risk indicators in the Certificate Holder Assessment Tool (CHAT) for the certificate holder, including Performance History (PH), Operational Stability (OS), Environmental Criticality (EC), and Certificate Holder Dynamics.
4		Review the certificate holder's FAA CHDO files.
5		Verify that the manuals in the certificate holder's manual system are present. Coordinate access of electronic manuals from the releasing CHDO to the acquiring CHDO. Typical manuals include, but are not limited to; 1) General Operations Manual (GOM), 2) General Maintenance Manual (GMM), 3) Training program manuals, 4) Minimum equipment lists (MEL), 5) Flight Attendant (F/A) Manual (Passenger or Cargo Passenger), and 6) Maintenance Reliability Program. Discard any outdated files in accordance with the office file guide. Do not discard any original certification documentation. List the certificate holder's manuals here:
6		Coordinate with the releasing RFSD office, acquiring RFSD office, and acquiring CHDO to: 1) Transfer the certificate holder's CHDO files, 2) Meet with the certificate holder, and 3) Transfer the certificate.

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7		Verify that PIs complete and close open Safety Assurance System (SAS) work assignments.
8		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).
9		Verify that PIs utilize Comprehensive Assessment Plan (CAP) to document critical planned surveillance.
10		Meet with the acquiring CHDO and discuss the SAS work program. Review the CHAT risk indicators and the Analysis, Assessment, and Action (AAA).
11		Confirm that the information contained in the certificate holder's operations specifications (OpSpecs) agrees with requests on file.
12		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.
13		Review the certificate holder's current "vitals" for accuracy in SAS. If necessary, contact the Aviation Data Systems Branch (AFS-620).
14		Complete enforcement actions and surveillance for outstanding hotline complaints, congressional inquiries, Safety Issues Reporting System (SIRS) issues, whistleblowers, voluntary disclosures, incidents, occurrences, etc.
15		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.
Notes:		
Phase 3—Releasing RFSD Office Final Tasks		
Item	Initials/Date or N/A	Details
1		Contact AFS-900 for support during the transfer process (as necessary).
2		Receive and review the certificate holder's CHDO files and provide continued support, direction, and procedures during transfer process.
3		Coordinate with the acquiring RFSD office for transfer of signature authority in WebOPSS (coordinate with the National Service Desk).
4		Coordinate with the acquiring RFSD office and CHDO to complete transfer of certificate.

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Notes:		
Phase 4—Acquiring RFSD Initial Tasks		
Item	Initials/Date or N/A	Details
1		Contact AFS-900 for support during the transfer process (as necessary).
2		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.
3		Identify and allocate resources, staffing, and training for the acquiring CHDO.
Notes:		
Phase 5—Acquiring CHDO Tasks		
Item	Initials/Date or N/A	Details
1		Contact AFS-900 for support during the transfer process (as necessary).
2		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.
3		Verify that all open items and/or discrepancies were resolved.
4		Fill required positions for the CHDO.
5		Complete required training.
6		Update the certificate holder's or applicant's team roster in SAS.
7		Meet with the releasing CHDO and discuss the SAS work program. Review the CHAT risk indicators and the AAA.
8		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).
9		Issue a new certificate holder certificate.
10		Transfer the new certificate in WebOPSS.
11		Verify that the eVID has been updated (refer to VPM).
12		Verify that all "Open" and "Planned" Program Tracking and Reporting Subsystem (PTRS) records are transferred.
13		Review all applicable OpSpecs.

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14		Update Master Minimum Equipment List (MMEL) user data.
15		Forward a copy of completed Certificate Transfer Process Job Aid, certificate transfer plan, and appropriate documents to the acquiring RFSD office.
16		Hold an introductory meeting with the certificate holder, the new CHDO OM, and office personnel.
Notes:		
Phase 6—Acquiring RFSD Office Final Tasks		
Item	Initials/Date or N/A	Details
1		Validate that all items on the Certificate Transfer Process Job Aid are complete.
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:		

10-10-1-17 through 10-10-1-29 RESERVED.

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VOLUME 10 SAFETY ASSURANCE SYSTEM POLICY AND PROCEDURES

CHAPTER 11 MAJOR CHANGES IN OPERATIONAL AUTHORITY

Section 2 Safety Assurance System: Major Change Process Document—Work Instructions

10-11-2-1 GENERAL.

A. Purpose. This section contains work instructions for the Major Change Process Document (MCPD). See Volume 10, Chapter 11, Section 1 for general information. See Volume 3, Chapter 34, Section 2 for information on what would be considered a major change of authority. The work instructions in this section provide reference material, briefing guides, meeting agendas, training requirements, and procedures material. If you are a participant in a major change in operational authority, this section applies to you.

B. Scope. The certificate-holding district office (CHDO) team leader (TL) is the point of contact (POC); he or she works closely with the principal inspectors (PI) to ensure continuity between the certificate holder and the change in operational authority. Participants in a major change in operational authority must refer to this process to determine if a certificate holder meets the requirements of the change in operational authority.

10-11-2-3 RESERVED.

10-11-2-5 BACKGROUND. Figure 10-11-2A, MCPD Work Instructions, consists of five phases and work instructions that identify the person responsible for each step in the process. Participants in a major change of operational authority may accomplish steps within each phase concurrently. Figure 10-11-2B, Schedule of Events, provides an example of a Schedule of Events (SOE) that the certificate holder will submit along with the required document list (RDL). Figure 10-11-2C is the MCPD Tracking Report that the TL uses to track step and phase completion.

Figure 10-11-2A. MCPD Work Instructions

PHASE 1—INITIAL INQUIRY.

1.1 Certificate Holder—Initiate a request for a major change in operating authority.

1.2 Certificate-Holding District Office (CHDO)—Brief the certificate holder of the required forms and documents to initiate the change. Recommend that the certificate holder conduct a self-audit of the changed operating authority using the appropriate system, subsystem, or element. The certificate holder will submit this data to the Certification Project Team (CPT).

NOTE: Inform the certificate holder that conducting a self-audit will reduce the time needed for us (the Federal Aviation Administration (FAA)) to affirm the Element Design Assessment (EDA).

1.2.1 CHDO—Develop a briefing agenda that focuses on the MCPD process to include the items below (refer to the RDL):

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- Aircraft Information Form located in Volume 10, Chapter 9, Section 1.
- Compliance Document List.
- Certificate holder's revised manual and programs.
- Proposed operations specifications (OpSpecs).
- Exemption and deviation requests.
- Outsourcing (contractual arrangements).
- Training curriculum to include initial cadre training.
- Lease agreement or proof of ownership of aircraft (include aircraft registration and serial number(s)).
- SOE (see Figure 10-11-2B).
- Training plan for dispatchers.
- System Safety Assessment Data Collection Tools (DCT). Identify the elements that the change will affect.
- Self-audit Element Design Data Collection Tools (ED DCT).
- Environmental assessment requirements located in Volume 11, Chapter 6, Section 3.
- If adding an aircraft, suggest the certificate holder conduct the aircraft conformity evaluation prior to our validation of the conformity in Phase 4. Use the Aircraft Configuration Control Document (ACCD).

1.3 Phase 1 Review.

1.3.1 CHDO—Verify the completion of all steps in Phase 1 before proceeding to Phase 2.

PHASE 2—APPLICATION.

2.1 Certificate Holder Submits Request.

2.1.1 CHDO—Receive the certificate holder's application to amend its OpSpecs, per Title 14 of the Code of Federation Regulations (14 CFR) part 119, § 119.51(c), by submitting a letter of request to the CHDO at least 90 days prior to the date of proposed change.

2.1.2 Principal Inspector(s) (PI)—Review the request to verify that sufficient information is provided to support the requirements of § 119.51 and that the proposed operation is consistent with 14 CFR parts 119 and 121. The information must be complete and detailed enough to permit a thorough evaluation.

2.1.3 PI(s)—Identify the Labor Distribution Reporting (LDR) project code (e.g., Project: 12XXFAFAR121; Task: CM0010).

2.1.4 PI(s)—Ensure that the appropriate Program Tracking and Reporting Subsystem (PTRS) codes are opened, as applicable.

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2.2 Establish Certification Team.

2.2.1 CHDO Manager—Notify the regional Flight Standards division (RFSD) if additional MCPD project team resources are required (e.g., dispatcher or geographical support).

2.2.2 CHDO Manager—Select a TL for the project.

2.2.3 CHDO Manager—If the Flight Standards National Field Office (FSNFO) (AFS-900) is assisting in the addition of a new make/model of aircraft, provide a copy of the submitted documents to the AFS-900 Certification and Evaluation Program Office Manager (OM) at AFS-900-Management-Team@faa.gov.

2.2.4 AFS-900 Certification and Evaluation Program OM—If requested, the AFS-900 Certification and Evaluation Program OM will assign a Certification Team Leader (CTL) and a certification team to assist with the project.

2.2.5 CTL—Create a new project in the AFS-900 Certification and Evaluation Program Office SharePoint Web site.

2.2.6 CHDO Manager/TL—Identify CPT members.

2.2.7 TL—Initiate MCPD Tracking Report. (See Figure 10-11-2C).

2.3 Review Submissions.

2.3.1 CPT—Review the certificate holder's submission for the RDL. The proposal should be clearly identified and the documentation specified in Phase 1 provided.

2.3.2 CPT—Discuss the review of the submission and determine acceptance or rejection.

2.3.3 TL—If the current submission is acceptable, provide a letter to the certificate holder.

2.3.4 TL—If the current submission is not acceptable, notify the certificate holder with a written explanation of concerns. Advise the certificate holder that the next revision must be an entire submission. Every document in the submission is labeled in sequential order (e.g., Rev. B, Rev. C, etc.).

2.3.5 TL/CTL—Modify steps of the MCPD project by adding or deleting steps to suit the individual project.

2.3.6 TL/CTL—Provide the MCPD to the certificate holder.

2.4 EDA Planning.

2.4.1 TL/CTL—Conduct a meeting with members of CPT to review the MCPD process.

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2.4.2 CPT—Identify system/elements located in Volume 10, Chapter 1, Section 2 that the change will affect.

2.4.3 TL—Provide air-carrier-specific familiarization briefing to members of the CPT.

2.4.4 TL—Ensure the certificate holder/applicant team roster lists all CPT members.

2.4.5 TL—Contact the Office of the Secretary of Transportation (OST), Office of Aviation Analysis, Air Carrier Fitness Division at 202-366-9721 to confirm that the OST authorizes the certificate holder to conduct the proposed operation.

2.5 Phase 2 Review.

2.5.1 TL/CTL—Verify the completion of all steps in Phase 2 before proceeding to Phase 3.

PHASE 3—ELEMENT DESIGN ASSESSMENT (EDA).

3.1 Planning Meeting—Modules 1 and 2.

3.1.1 PI(s)—Revise the Certificate Holder Operating Profile (CHOP) by selecting the applicable elements based on the requested scope of operation.

3.1.2 PI(s)—Modify the Certificate Holder Assessment Tool (CHAT) and populate it with identified risks.

3.1.3 PI(s)—Update the Comprehensive Assessment Plan (CAP). Ensure work instructions for EDA and Custom Data Collection Tools (C DCT) include at least the name of the team coordinator (TC), team member, and any other work instructions needed. Enter "MCPD, Rev. X" in the "Local/Regional/National" field.

3.1.4 PI(s)—Identify the design elements that relate to approved manuals or programs, or to OpSpecs changes. Use Volume 10, Chapter 1, Section 2 to include elements that have been identified as high priority in the CAP.

NOTE: Teams assigned to DCTs that relate to approved manuals, programs, or to OpSpecs must include at least one aviation safety inspector (ASI) listed on the certificate holders/applicant's team roster. (The DCT TC will normally be the PI or ASI.)

NOTE: C DCT(s) may substitute for an ED DCT(s) to target specific element questions.

3.1.5 PI(s)—Adjust the EDA due dates for all elements revised or added as a result of the major change to the certificate holder's operation based on the SOE.

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3.2 Resource Management—Module 3.

3.2.1 TL/CTL—Provide input to Frontline Managers (FLM) to help them identify team resources to complete the EDA.

3.2.2 CHDO and AFS-900 FLMs—Determine resource availability and assign TCs and team members to support the EDA plan.

3.2.3 CHDO Manager—Concur with the CAP.

3.3 Initial Cadre Training.

NOTE: Since all certificate holders must complete training before Phase 4 can begin, plan to complete EDAs in training elements first.

3.3.1 TL/PI—Review the Initial Cadre Check Airman (ICCA) plan to verify compliance with procedures found in Volume 3, Chapter 20, Sections 2 and 6. Accomplish the elements for ICCA training. Accept all courseware.

3.3.2 PI—Notify the certificate holder in writing of the approval. Include in the letter that additional training may be required if deficiencies are found during the review process.

3.3.3 TL/PI—Ensure the CAP is retargeted to assess the performance of the ICCA training.

3.4 Initial Training—Other.

3.4.1 CPT—Review other initial training to begin prior to the completion of Phase 3. Review the training program by using ED DCTs or C DCTs and related procedures. After the review, you must agree that all courseware and training materials are acceptable.

3.4.2 CPT—Review applicable procedures for:

3.4.2.1 Flightcrew member training located in Volume 3, Chapter 19.

3.4.2.2 Dispatcher training located in Volume 3, Chapter 22.

3.4.2.3 Flight attendant (F/A) training located in Volume 3, Chapter 23.

3.4.2.4 Maintenance personnel training located in Volume 3, Chapter 24.

3.4.3 TL—Coordinate with the responsible PI to provide initial approval for the training program.

3.4.4 PI—Notify the certificate holder in writing of the approval. Include in the letter that additional training may be required if deficiencies are found during the review process.

3.4.5 TL/PI—Ensure the CAP is retargeted to assess the performance of the training.

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3.5 Data Collection—Module 4.

3.5.1 CPT—Accomplish an EDA, and verify certificate holder self-audited ED DCT data.

3.5.2 CPT—Accomplish data collection by using Microsoft Word-formatted ED DCTs/C DCTs instead of the automation entries.

3.5.3 CPT—Complete the EDA sections using the work instructions provided by the PIs.

3.5.4 CPT—Collect and analyze data by conducting a data analysis meeting.

NOTE: If an ASI observes an issue not related to his or her element, submit an "other" Dynamic Observation Report (DOR), and notify the ASIs working that element.

3.5.5 TL—If the certificate holder's self-audit ED DCT data lack quality and/or when additional data are needed, notify the certificate holder with a written explanation of concerns.

3.5.6 TL—If a subsequent certificate holder's self-audit ED DCT data contain minimal concerns, then schedule and conduct a meeting with the CPT and certificate holder to discuss and correct the discrepancies.

NOTE: Minimal concerns do not prevent the acceptance or approval of a manual.

3.6 Data Reporting—Module 4.

3.6.1 CPT—Enter data into the automation once the certificate holder's self-audit of ED DCT data is of sufficient quality.

3.6.2 CPT—Enter the certificate holder's self-audit of ED DCT data by selecting "Begin New Activity." Enter "MCPD" in the "Local/Regional/National" field on the "Common Data" screen. Begin data reporting by entering the certificate holder's self-audit of ED DCT data for the sections not assigned to the CPT for assessment. Identify these data as "Certificate Holder-Provided Data." Once all the certificate holder's self-audit ED DCT data have been entered, save activity number 1 to "final."

NOTE: If a certificate holder declines to submit a self-audit of ED DCTs, then proceed to step 3.6.3 and save as "Activity 1."

3.6.3 CPT—Each team member will enter his or her responses into the automation by selecting "Begin New Activity." Enter "MCPD" in the "Local/Regional/National" field on the "Begin Inspection Activity" screen. With the completion of data entry, save activity number 2 to "final."

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3.6.4 CPT—Ensure ED DCT, C DCT, and DOR data meet the data quality guidelines (DQG).

3.6.5 TC—Save ED DCT to master record.

3.7 Data Reviewing—Module 4.

3.7.1 TL/Data Quality Reviewer (DQR)—Ensure data meet DQGs.

3.7.2 TL/DQR—Ensure data are saved to the automation.

3.8 Analysis, Assessment, and Action (AAA)—Module 5.

3.8.1 TL—Conduct an EDA meeting with members of the CPT.

3.8.2 TL—Make a bottom-line assessment for each element and document on the AAA tool.

3.9 Design AAA—Module 5.

3.9.1 PI(s)—Follow the Module 5 business process found in Volume 10, Chapter 6, Section 1, to determine the appropriate course of action for each element.

3.9.2 TL—Approve or accept the entire certificate holder's system design without mitigation, then accept or approve manuals and programs, as applicable; or

3.9.3 TL—Accept the certificate holder's system design with mitigation, accept or approve manuals and programs, then document the need for additional data collection, monitoring, or mitigation; or

3.9.4 TL—Reject the certificate holder's system design, then notify the certificate holder in writing and repeat steps as necessary in Phase 3.

3.10 Check Status of the Following:

3.10.1 TL—Environmental review.

3.10.2 TL—Dangerous goods program.

3.10.3 TL—Security program.

3.10.4 TL—Check new requirements of economic authority.

NOTE: The CHDO manager may elect to review baseline staffing and baseline training requirements at this time.

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3.11 OpSpecs.

3.11.1 Certificate Holder and TL—Verify that the proposed or revised OpSpecs are available in draft form.

3.12 Phase 3 Review.

3.12.1 Certificate Holder—Complete training for all Phase 4 participants.

3.12.2 TL/CTL—Verify the completion of all steps in Phase 3 before proceeding to Phase 4.

PHASE 4—ELEMENT PERFORMANCE ASSESSMENT (EPA).

4.1 Confirm Operational Readiness.

4.1.1 Certificate Holder—Conduct an internal safety assessment of operating systems using company internal evaluation procedures and documentation. Submit results to the TL.

4.1.2 Certificate Holder—Correct all concerns found during the internal evaluation.

4.2 EPA Planning—Module 2.

4.2.1 Certificate Holder—Submit an updated SOE.

4.2.2 TL—Review and concur with the SOE.

4.2.3 PI(s)—Update the CHAT using information from the EDA.

4.2.4 PI(s)—Adjust the CAP and plan the EPA to observe during the demonstration phase. Include elements determined to be high priority/risk in the CAP.

NOTE: To prevent a large number of "not observed" answers, the PIs may use C DCT(s) in place of the EPA(s) to target specific element questions.

4.2.5 PI(s)—Adjust the EPA due dates for all elements revised or added, based on the SOE.

4.2.6 PI(s)—Ensure work instructions for assigned EPA(s) and C DCT(s) include at least the name of the team member and work instructions.

NOTE: Enter "MCPD, Rev. X" in the "Local/Regional/National" field box.

4.3 Resource Management—Module 3.

4.3.1 TL/CTL—Provide input to FLMs to help them identify team resources to complete the CAP.

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4.3.2 CHDO and AFS-900 FLMs—Determine resource availability and assign team members to support the CAP.

4.3.3 CHDO Manager—Concur with the CAP.

4.4 Aircraft Conformity Evaluation—Module 4.

4.4.1 Certificate Holder—Complete the internal aircraft conformity inspection. Notify the TL of aircraft availability. Forward the ACCD and the Aircraft Information Form, or accepted/approved company forms, to the TL at least 10 business days prior to the aircraft conformity evaluation. The certificate holder will confirm that appropriate personnel are available for this evaluation.

4.4.2 TL—Confirm that the completed Aircraft Information Form and accepted/approved company forms are current and turned in 10 business days prior to inspection.

4.4.3 CPT—Review documents listed on the aircraft document request list.

4.4.4 TL—Review and confirm the certificate holder's aircraft conformity evaluation and records inspection to confirm all records are available to continue to the next step.

4.4.5 CPT—Use the ACCD to evaluate the aircraft and records.

4.4.6 TL—Compare the CPT's evaluation results to the certificate holder's conformity evaluation.

4.4.7 TL—Notify the certificate holder in writing of evaluation results and any discrepancies requiring correction.

4.4.8 Certificate Holder—Submit a letter identifying corrections based on the conformity evaluation to the TL. Update the SOE.

4.4.9 TL—Accept or reject the corrective action(s). If the corrective action(s) require revision to the manuals, then return to the system safety review process. When the aircraft conformity is satisfactory, notify the certificate holder and proceed to the evacuation/ditching demonstration, or proving tests.

4.5 Demonstration Plans.

4.5.1 Certificate Holder—Submit the following plans for the proposed operation:

- Emergency evacuation plan.
- Ditching plan.
- Proving test plan.

4.5.2 Certificate Holder—Submit a request for a letter of authorization (LOA) to operate in accordance with § 119.33(c) and part 121, § 121.163, while demonstrating the

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appropriate operations under part 121. The certificate holder must make this request at least 10 business days before any aircraft flight demonstrations.

4.5.3 Certificate Holder—Submit evacuation/ditching demonstration plans found in Volume 3, Chapter 30 to the project manager.

4.5.4 TL—Forward the evacuation/ditching demonstration plan to the ASI or ASI-Cabin Safety (CS) for review and resource planning.

4.5.5 ASI/ASI-CS—Review the emergency evacuation/ditching demonstration plan and submit any recommendations or procedures to the project manager.

4.5.6 TL—Return the emergency evacuation/ditching demonstration plans and any recommendations/procedures to the certificate holder to make corrections, and resubmit plan to include an updated SOE.

4.5.7 TL—If the plan is acceptable, meet with the CPT to establish resources needed and plan the demonstration.

4.5.8 TL—If applicable, respond to the certificate holder's request for a reduction of proving test hours. Early completion of proving tests may require RFSD approval, as found in Volume 3, Chapter 29, Section 7.

NOTE: Section 121.163 contains authority for us to reduce the proving flight hours specified in the basic regulation.

4.5.9 Certificate Holder—Submit a request for an LOA, as required by § 119.33(c), for demonstrating appropriate operations under part 121. Make this request at least 10 business days before any aircraft flight demonstration.

4.5.10 Certificate Holder—Submit updated draft OpSpecs.

4.5.11 TL—Ensure draft OpSpecs have been completed by the CHDO.

4.5.12 CHDO Manager/TL—Issue LOA in accordance with Volume 3, Chapter 29 and § 119.33(c).

4.6 Tabletop Exercise.

4.6.1 CPT—Tabletop exercises are a valuable tool to determine if the certificate holder's systems and personnel are ready to perform at a level that justifies conducting proving test flights. The successful completion of a tabletop exercise is an excellent indicator that the certificate holder can conduct the proving test flights within the budget set by the certificate holder and without modification to the submitted plan. If the decision is made to conduct a tabletop exercise, follow the procedures found in Volume 3, Chapter 29, Section 5. Develop scenarios to assess performance during tabletop exercises.

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4.6.2 CPT/Certificate Holder—Conduct tabletop exercises and discuss the results of each scenario.

4.6.3 TL—If any scenario is unsatisfactory, then confirm the certificate holder has made corrections to its system design or has corrected personnel performance issues before beginning proving tests.

4.7 Evacuation/Ditching Demonstrations (as required).

4.7.1 TL/ASI-CS—Discuss demonstration plan with the CPT.

4.7.2 TL/ASI-CS—Brief the certificate holder on the plan and expectations.

4.7.3 CPT/Certificate Holder—Conduct evacuation/ditching demonstrations, as applicable.

4.7.4 CPT—Observe emergency evacuation/ditching demonstrations and document the results on FAA Form 8430-1, Air Carrier Emergency Evacuation Demonstration Report, and retain for the project report. Record EPA(s) and/or C DCTs.

4.7.5 TL—After the CHDO manager reviews and initials the report, forward a completed copy of FAA Form 8430-1 to the RFSD.

4.7.6 TL—Save completed FAA Form 8430-1 copies.

4.8 Assess Certificate Holder's Facilities—Module 4.

4.8.1 CPT—Assess at least the following facilities using the appropriate DCTs:

- Station Facilities (Operations).
- Maintenance Facility/Main Maintenance Base.
- Line Station Facilities (Airworthiness).
- Maintenance Providers (Airworthiness).

NOTE: The CPT may accomplish these assessments prior to or during proving tests by observing the certificate holder conduct their own internal safety assessment (see step 4.1).

4.9 Prepare for Proving Tests.

4.9.1 TL—Confirm that the OST/Department of Transportation (DOT) has issued the show cause order "if required" by the OST/DOT.

4.9.2 TL—Conduct a predemonstration test meeting with the CPT, as found in Volume 3, Chapter 29, Sections 2 and 4.

4.9.3 TL—Schedule the CPT for proving tests.

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4.9.4 CPT—Develop proving test scenarios that facilitate the collection of data to complete the EPA.

4.10 CPT and Certificate Holder Conduct Proving Tests.

4.10.1 TL—Coordinate the proving test plan with the assigned CPT members and assign tasks to participating team members. Conduct the proving tests using the five-phase process described in Volume 3, Chapter 29, Section 2.

4.10.2 CPT and Certificate Holder—Meet to discuss the proving test protocols and the proposed flight schedule.

4.10.3 CPT—Prior to each day's proving tests, conduct a daily briefing with the certificate holder's participants to review the day's plan.

4.10.4 CPT and Certificate Holder—Prior to each day's proving tests, conduct a briefing with the certificate holder to review the day's plan.

4.10.5 CPT and Certificate Holder—Conduct proving tests.

4.10.6 CPT—Use the Tabletop Scenario Worksheet as found in Volume 3, Chapter 29, Section 5, to collect data. All team members should reach a consensus on the results of each scenario.

4.10.7 CPT and Certificate Holder—Debrief the results at the end of each day.

4.10.8 CPT—Document results of each scenario on the Tabletop Scenario Worksheet.

4.10.9 TL—If all test objectives are met, and the certificate holder has demonstrated the ability to conduct line operations in compliance with regulations and safe operating practices, then recommend to conclude the proving tests.

4.10.10 TL—If test objectives are not met or the certificate holder has not demonstrated its ability to conduct line operations in compliance with regulations and/or safe operating practices, then evaluate the need for an extension or termination of the proving tests.

4.10.11 CHDO Manager—Notify the RFSD of normal completion of proving tests or proving tests that were terminated due to an unsatisfactory performance.

NOTE: The RFSD must concur with the early termination of the proving test due to the certificate holder's unsatisfactory performance. Early completion (completed before the approved flight hours) or normal completion is only a report to the RFSD.

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4.11 Data Reporting—Module 4.

4.11.1 CPT—Enter EPA, C DCT, and DOR data in accordance with DQGs and submit.

4.11.2 CPT—Submit the EPA when it is complete.

4.12 Data Review—Module 4.

4.12.1 DQR—Ensure data meets DQGs and save records to the automation.

4.13 Analysis and Assessment—Module 5.

4.13.1 TL—Conduct an EDA meeting with members of the CPT.

4.13.2 PI(s)—Make a bottom-line assessment for each element and document on the AAA.

4.14 Performance AAA—Module 5.

4.14.1 PI(s)—Follow the guidance in Module 5 to determine the appropriate course of action for each element.

4.14.2 PI(s)—If the certificate holder's system meets performance standards but has minor problems, determine if additional data collection, monitoring, or action is necessary.

4.15 Phase 4 Review.

4.15.1 TL/CTL—Verify the completion of all steps in Phase 4 before proceeding to Phase 5.

PHASE 5—ADMINISTRATIVE FUNCTIONS.

5.1 Approve OpSpecs.

5.1.1 TL—Approval is issued by letter, by stamp of approval, by the issuance of OpSpecs, or in accordance with procedures.

5.1.2 TL/PIs—Verify that all required changes to the enhanced Vital Information Database (eVID) and OpSpecs have been completed. Coordinate with PIs on approval/disapproval of the certificate holder's OpSpecs.

5.1.3 TL/PI(s)—Validate that all manuals have been either accepted or approved.

5.1.4 PI(s)—Review the OST limitations.

5.1.5 PI(s)—Sign OpSpecs.

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5.2 Issue Air Carrier Certificate (as applicable).

5.2.1 CHDO Manager—Review and forward amended certificate to the Regional Division Manager.

5.2.2 RFSD Manager—Sign the air carrier certificate and return to the CHDO.

5.2.3 CHDO Manager—Issue the amended air carrier certificate.

5.3 Prepare and Submit Final Report to CHDO Manager.

5.3.1 TL/CTL—Ensure the report includes the following:

- Letter of Application.
- Proving test report.
- Emergency evacuation/ditching demonstration report.
- List of OpSpecs paragraphs issued (as applicable).
- All formal correspondence with the certificate holder.

5.3.2 CHDO—Retain final report.

5.4 Phase 5 Review.

5.4.1 TL/CTL—Verify the completion of all steps in Phase 5.

5.4.2 CTL—Send message to the CTL assigned by the AFS-900 Certification and Evaluation Program Office to have team members remove certificate holder company manuals from their computers.

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Figure 10-11-2B. Schedule of Events

Name of Applicant:	**Date:**	
Events	**Date Proposed**	**Date Accomplished**
Phase 1—Initial Inquiry		
Certificate Holder Initiates Change Request.		
Certificate-Holding District Office (CHDO) Briefs Certificate Holder on Major Change Process Document (MCPD).		
Phase 2—Application		
Certificate Holder Submits Request and Required Documents to Support Application.		
Application Meeting.		
Phase 3—Element Design Assessment (EDA)		
Receive Initial Approval for Initial Cadre Check Airman (ICCA) Training.		
Begin ICCA Training.		
All Manuals Approved/Accepted.		
Flightcrew Member Training		
Begin Instructor Training.		
Begin Basic Indoctrination.		
Begin Emergency Training.		
Begin Ground Training.		
Begin Flight Training.		
Begin Check Airmen Training.		
Flight Follower/Dispatch Training		
Begin Instructor Training.		
Begin Basic Indoctrination.		
Begin Ground Training.		
Begin Competency Check Air Transportation Supervisor (ATS) Training.		
Begin FAA-Administered Competency Checks to ATS (as applicable). (Note: A dispatch safety inspector (DSI) must administer the check.)		
FAA-Observed Comp Check Administered by ATS.		
Operating Familiarization (Must be completed within 90 days of the initial introduction of the aircraft).		
Competency Checks.		

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Figure 10-11-2B. Schedule of Events (Continued)

Events	Date Proposed	Date Accomplished
Flight Attendant (F/A) Training		
Begin Instructor Training.		
Begin Basic Indoctrination.		
Begin Emergency Training.		
Begin Ground Training.		
Begin Competency Check Supervisor Training.		
Maintenance Training		
Begin Instructor Training.		
Begin Basic Indoctrination.		
Begin Aircraft Ground Training.		
Begin Maintenance ASI Training (RII).		
Training Completed for Phase 4 Participants.		
Phase 4—Element Performance Assessment (EPA)		
Proposed Operation Start Date.		
Submit Operational Readiness Results.		
Submit Emergency Evacuation and Ditching Plan (as required).		
Submit Proving-Run Test Plan.		
Submit Completed Aircraft Conformity Evaluation Documentation.		
Aircraft Ready for FAA Conformity Evaluation.		
Tabletop Exercise.		
Evacuation/Ditching Demonstration.		
Generate Proving Test Letter of Authorization (LOA).		
Conduct Proving Test.		
Finish Proving Runs.		
Assess Certificate Holder’s Facilities.		
Proposed Operation Start Date.		

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Figure 10-11-2C. Major Change Process Document Tracking Report

MCPD TRACKING REPORT

PROJECT IDENTIFICATION

CERTIFICATE HOLDER	PROJECT NUMBER

PHASE 1—INITIAL INQUIRY

STEP	TITLE	DATE CLOSED	INITIALS	COMMENTS
1.1	Certificate Holder Initial Inquiry.			
1.2	Certificate-Holding District Office (CHDO) Briefing to Certificate Holder.			
1.3	Phase 1 Review.			

PHASE 1

DATE COMPLETED	INITIALS	COMMENTS

PHASE 2—APPLICATION

STEP	TITLE	DATE CLOSED	INITIALS	COMMENTS
2.1	Certificate Holder Submits Request.			
2.2	Establish Certification Team.			
2.3	Examination of Submissions.			
2.4	Element Design Assessment (EDA) Planning.			
2.5	Phase 2 Review.			

PHASE 2

DATE COMPLETED	INITIALS	COMMENTS

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Figure 10-11-2C. Major Change Process Document Tracking Report (Continued)

PHASE 3—ELEMENT DESIGN ASSESSMENT (EDA)

STEP	TITLE	DATE CLOSED	INITIALS	COMMENTS
3.1	Planning Meeting—Module 2.			
3.2	Resource Management—Module 3.			
3.3	Initial Cadre Training.			
3.4	Other Initial Training.			
3.5	Data Collection—Module 4.			
3.6	Data Reporting—Module 4.			
3.7	Data Review—Module 4.			
3.8	Analysis and Assessment— Module 5.			
3.9	Action—Module 5.			
3.10	Status Check—Programs and Approvals Process Proving-Test Plan.			
3.11	Operations Specifications (OpSpecs).			
3.12	Phase 3 Review.			

PHASE 3

DATE COMPLETED	INITIALS	COMMENTS

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Figure 10-11-2C. Major Change Process Document Tracking Report (Continued)

PHASE 4—ELEMENT PERFORMANCE ASSESSMENT (EPA)

STEP	TITLE	DATE CLOSED	INITIALS	COMMENTS
4.1	Confirm Operational Readiness.			
4.2	EPA Planning—Module 2.			
4.3	Resource Management—Module 3.			
4.4	Aircraft Conformity Evaluation—Module 4.			
4.5	Demonstration Plans.			
4.6	Tabletop Exercise.			
4.7	Evacuation/Ditching Demonstrations.			
4.8	Assess Certificate Holder's Facilities.			
4.9	Prepare for Proving Flights.			
4.10	Certification Project Team (CPT) and Certificate Holder Conduct Proving Flights.			
4.11	Data Reporting—Module 4.			
4.12	Data Review—Module 4.			
4.13	Analysis and Assessment—Module 5.			
4.14	Action—Module 5.			
4.15	Phase 4 Review.			

PHASE 4

DATE COMPLETED	INITIALS	COMMENTS

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Figure 10-11-2C. Major Change Process Document Tracking Report (Continued)

PHASE 5—ADMINISTRATIVE FUNCTIONS

STEP	TITLE	DATE CLOSED	INITIALS	COMMENTS
5.1	Approve OpSpecs.			
5.2	Issue Air Carrier Certificate (as applicable).			
5.3	Prepare and Submit Final Report to CHDO Manager.			
5.4	Phase 5 Review.			

PHASE 5

DATE COMPLETED	INITIALS	COMMENTS

10-11-2-7 through 10-11-2-29 RESERVED.

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VOLUME 10 SAFETY ASSURANCE SYSTEM POLICY AND PROCEDURES

CHAPTER 12 HAZARDOUS MATERIALS OVERSIGHT

Section 1 Safety Assurance System: Hazardous Materials Oversight

10-12-1-1 GENERAL.

A. Purpose. This section explains how Hazardous Materials Safety Program (HMSP) personnel will conduct Safety Assurance System (SAS) activities related to hazardous materials (hazmat). HMSP personnel will work in collaboration with the principal inspector (PI)/certification project manager (CPM).

B. Scope. This section applies to the Hazardous Materials Division Manager (HMDM), the Principal Hazardous Materials Inspector (PHI), the Hazardous Materials Frontline Manager (HM FLM), the Hazardous Materials Safety Inspector (HSI), and PIs/CPMs.

10-12-1-3 ACRONYMS, ABBREVIATIONS, AND DEFINITIONS. The following acronyms, abbreviations, and definitions apply to hazmat safety personnel.

Table 10-12-1A. Acronyms, Abbreviations, and Definitions

ADG	Office of Hazardous Materials Safety
ADG-1	Director of the Office of Hazardous Materials Safety
HMDM	Hazardous Materials Division Manager
HM FLM	Hazardous Materials Frontline Manager
HMFO	Hazardous Materials Field Office
HMSP	Hazardous Materials Safety Program
HSI	Hazardous Materials Safety Inspector
Hazardous Materials (Hazmat)	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 (refer to Title 49 of the Code of Federal Regulations (49 CFR) part 172, § 172.101), and materials that meet

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	the defining criteria for hazard classes and divisions in 49 CFR part 173.
NIIM	National Inspection and Investigations Manual
PHI	Principal Hazardous Materials Inspector

10-12-1-5 ROLES AND RESPONSIBILITIES.

A. Hazardous Materials Division Manager (HMDM) and/or Principal Hazardous Materials Inspector (PHI). The HMDM/PHI does the following:

1) Reviews a certificate holder's or applicant's request for new or changed scope of operation and, if accepted, adjusts the Certificate Holder Operating Profile (CHOP) as required. The adjusted CHOP will produce the scoped Data Collection Tools (DCT) needed to cover the change. The HMDM is required to enter data into Module 1, Configuration, if the external portal is not used.

2) Collects and organizes information to complete a certificate holder or applicant assessment, solicit input from team members, and make decisions about oversight requirements.

3) Updates the configuration data in Module 1.

4) Prioritizes SAS System or Subsystem Performance Assessments (SPA) by following SAS planning procedures.

5) Determines retargeting of oversight activities based on analysis of data or significant changes in the operating environment. Significant changes include, but are not limited to, financial distress, labor unrest, and changes in the scope and scale of operations/ratings (e.g., growth or downsizing) that may affect the certificate holder's or applicant's ability to balance resources, size, and organizational structure with operational requirements. Other examples are accidents, incidents, or occurrences that could affect a certificate holder and result in a change to oversight activities.

6) Participates in periodic meetings with the applicant or certificate holder to stay informed on financial health and growth plans or other conditions that might cause an imbalance between resources and operations.

7) Provides specific instructions, as needed, for completing inspections using the planning procedures, and ensures inspections are completed in accordance with the HMSP National Inspection and Investigations Manual (NIIM).

8) Brings aviation safety concerns to the Operations Research Analyst (ORA), communicates analytical needs frequently to the ORA, and includes the ORA in discussions or meetings of safety-related issues.

9) Determines if the certificate holder's or applicant's program and processes meet the standards for acceptance or approval.

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10) Determines the appropriate action for the results of SPAs, Element Performance Assessments (EPA), Element Design Assessments (EDA), Essential Maintenance Providers (EMP) inspections, and Custom Data Collection Tools (C DCT) through Analysis, Assessment, and Action (AAA).

11) Plans geographic program requests.

12) Recommends resources.

13) Evaluates data in the AAA and determines if there is sufficient data to make an assessment.

B. Additional HMDM/PHI Responsibilities.

1) After coordination with the Frontline Manager (FLM), the HMDM/PHI may select a proxy in the automation. The proxy would then be able to perform the same functions as the HMDM/PHI does in various places of the automation.

2) The HMDM/PHI is responsible for identifying new hazards.

3) HMDMs/PHIs may meet at least annually with their FLM and ORA to determine analytical needs. Discussion topics for this meeting include type of reports, frequency, and timing of ORA products.

4) HMDMs/PHIs use the Analysis and Assessment process to make informed decisions about the certificate holder's or applicant's operating systems (1) before approving or accepting them when required to do so by regulations, and (2) during recurring Performance Assessments (PA). They take appropriate actions based on their analysis and assessment and monitor progress using the Action Item Tracking Tool (AITT).

5) The HMDM/PHI ensures certificate holder regulatory compliance and system adequacy through recurring assessment.

6) The HMDM/PHI and the PI/CPM are responsible for collaborating on hazmat activities during the initial certification and certificate management process when hazmat elements are involved. HMDMs/PHIs are responsible for all SAS processes for Office of Security and Hazardous Materials Safety (ASH)-specific elements. HMDMs/PHIs may assist PIs/CPMs on elements within their Areas of Responsibility (AOR).

C. Hazardous Materials Frontline Manager (HM FLM). The HM FLM does the following:

1) Assigns HSI resources based on resource order first.

2) Provides leadership, support, and resources to ensure that personnel are properly trained and have met the SAS baseline training requirements.

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3) Ensures that personnel complete assigned tasks effectively in accordance with established SAS processes and procedures and the NIIM.

4) Concurs with the work plan for Title 14 of the Code of Federal Regulations (14 CFR) parts 121, 135, and 145.

5) Assigns work plans.

6) Assigns incoming geographic program requests.

7) Concurs with outgoing geographic program requests.

8) Ensures personnel conduct assigned work plans according to the specific inspection instructions.

9) Provides necessary leadership to resolve differences of opinion between reporting HSIs and Data Quality Reviewers (DQR).

10) Ensures the office roster is maintained.

11) Ensures the SAS make, model, and series (M/M/S) tables are maintained.

12) Approves random inspections (RI).

13) Performs data review, as required.

14) Assigns a proxy to perform duties when needed.

D. Data Quality Reviewer (DQR). The DQR does the following:

1) Continually monitors the status of reports and records in the automation and reviews them in accordance with the data quality guidelines (DQG) and the NIIM.

2) Promptly initiates actions necessary to resolve data quality issues or discrepancies.

E. Hazardous Materials Safety Inspector (HSI). The HSI listed on the SAS office roster does the following:

1) Participates in the planning activities to develop the corrective action plan (CAP).

2) Schedules, coordinates, and accomplishes the work assignments using SAS tools and the NIIM. HSIs may work individually or as part of a team when conducting a Data Collection Tool (DCT).

3) Accurately and promptly enters data collection results into the automation in accordance with DQGs and the NIIM.

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4) Submits reports using the Dynamic Observation Report (DOR) when observations are relevant to safety but are unplanned or outside of the planned surveillance. These observations are incidental to other work assignments.

5) Reevaluates returned inspection records and decides on the appropriate action (e.g., editing the record, conducting additional observations, or taking no action).

6) Promptly identifies unsafe conditions or possible regulatory violations observed during data collection, notifies the appropriate personnel, and makes appropriate entries into data systems (e.g., SAS automation).

7) Follows established procedures to assist HMDMs in determining that the applicant or certificate holder complies with its written procedures and meets its established performance measures.

8) Performs reviews of data that falls within his or her scope of expertise.

9) Supports HMDMs and PHIs and performs tasks associated with the risk management process (RMP) and/or identifying new hazards, as assigned.

10) Conducts geographic inspections.

11) Conducts RIs as approved.

F. Team Coordinator (TC). The TC organizes and coordinates the team activities and determines how the questions are distributed among the team members. The TC ensures team members accurately answer the questions and completes the DCT on time.

G. Geographic Resource. The Geographic Resource does the following:

1) Submits reports using the DOR when observations are relevant to safety but are unplanned or outside of the planned surveillance. These observations are incidental to other work assignments.

2) Completes geographic assigned tasks and enters data collection results accurately and promptly into the automation in accordance with DQGs.

3) Reevaluates returned inspection records and decides on the appropriate action (e.g., editing the record, conducting additional observations, or taking no action).

4) Promptly identifies unsafe conditions or possible regulatory violations observed during data collection. Notifies appropriate personnel and makes appropriate entries into Federal Aviation Administration (FAA) data systems.

5) Conducts data collection, as assigned.

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H. Regional Coordinator. The Regional Coordinator does the following:

1) Completes the baseline training requirements.

2) Uses allocated resources (e.g., funding and trained personnel) in accordance with ASH priorities.

3) Resolves issues that participating offices identify.

4) Supports geographic resource requests.

5) Concurs with plan when required.

10-12-1-7 HAZMAT OVERSIGHT.

A. Baseline Training Requirements.

Figure 10-12-1A. Baseline Training Requirements

HSI	**To Collect Data:** Air Transportation of Dangerous Goods (108 hours) Introduction to SAS (Web-Based Training (WBT)) Data Collection Tool (DCT) Fundamentals for SAS (WBT) SAS for Inspectors and Field Office Management (FOM)
HMDM/PHI HM FLM	**To Assign Work:** Air Transportation of Dangerous Goods (108 hours) Introduction to SAS (WBT) SAS for Inspectors and Field Office Management (FOM)

B. Planning—Module 2. This module applies to the HMDM/PHI and PI/CPM. (See Volume 10, Chapter 3, for more information.)

1) The HMDM/PHI will collaborate with the PI/CPM to schedule a meeting to determine when hazmat assessments (C DCTs and/or ED DCTs) are scheduled.

2) The HMDM/PHI prepares reports, to include the Voluntary Disclosure and Reporting Program (VDRP) and other documents for review and analysis. Contacts the PI/CPM to develop a risk-based data collection plan. The HMDM, PHI, PI/CPM, and HMDM consider the following for hazmat elements:

a) The number of team members for ED DCTs—both ASIs and HSIs, if applicable.

b) The number of C DCTs and ED DCTs, who will do them, and at what locations.

c) The location and name(s) of the ASI/HSI in the PI/CPM instructions.

3) The HMDM or PHI will update the CAP for hazmat-specific elements.

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NOTE: The HMDM will provide the Flight Standards National Field Office (AFS-900), Continual Improvement Program Office, Automation Team, with the names of the HSIs to be added to the database.

C. Resource Management—Module 3. This module applies to the HM FLM. (See Volume 10, Chapter 4, for more information.)

1) The HM FLM evaluates the CAP to determine if resources are available to accomplish the hazmat assessments. The HM FLM considers scheduled leave, scheduled training, and other potential resource factors.

2) The HM FLM assigns ED DCT TCs and team members as needed.

NOTE: When an HSI is not available to perform hazmat data collection, then the HM FLM will use Resources Not Available (RNA) to document the lack of resources. The HM FLM must not assign ASIs to hazmat data collection activities when HSI resources are not available.

D. Data Collection, Data Reporting, and Data Review—Module 4. This module applies to the HSIs, HM FLMs, HMDM, PHI, DQR, and PI/CPM. (See Volume 10, Chapter 5, for more information.)

1) The HSIs collect and report data in accordance with Volume 10, Chapter 5, Sections 1, 2, and 3.

2) The HM FLM will review the HSI data in accordance with DQGs found in Volume 10, Chapter 5, Section 3. Once the record has been submitted, the DQR reviews the record.

E. Analysis, Assessment, and Action—Module 5. This module applies to HMDMs, PHIs, HM FLMs, and PIs/CPMs. (See Volume 10, Chapter 6, for more information.)

1) The HMDM, PHI, and HM FLM review data and conduct analysis and assessment to consider if there were any failures attributed to the certificate holder's system design. Then the HMDM/PHI will make the assessment determination regarding the system design and/or performance related to hazmat.

2) The PI/CPM, PHI, and HMDM refer to Volume 2, Chapter 2, Section 6, to determine if the hazmat program continues to meet the requirements for approval of training and/or acceptance of manuals. The HMDM or PHI includes a memorandum to the PI/CPM with their recommendation of acceptance or approval (or rejection if changes are necessary).

10-12-1-9 through 10-12-1-29 RESERVED.

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VOLUME 13 FLIGHT STANDARDS DESIGNEES

CHAPTER 2 AIRCREW DESIGNATED EXAMINER PROGRAM

Section 3 Safety Assurance System: Aircrew Program Designees and Designated Flight Engineers in an Aircrew Designated Examiner Program

13-106 GENERAL. This section contains information and guidance to be used by certificate managers, principal operations inspectors (POI) and inspectors concerning aircrew program designees (APD) and designated flight engineer examiner (DFEE) responsibilities, and the selection, training, supervision, and administrative control of APDs/DFEEs in an Aircrew Designated Examiner (ADE) program. This section is related to Safety Assurance System (SAS) Element 2.1.5 (OP), Appropriate Airmen/Crewmember Checks and Qualifications.

13-107 PRIVILEGES OF ADEs/DFEEs. All certification conducted by an APD/DFEE must be limited to the privileges of the APD/DFEE's airman certificate, the APD/DFEE's Certificate of Authority (COA), the APD/DFEE's letter of authority (LOA), one certificate type (pilot or Flight Engineer (FE)), and one aircraft type.

A. Privileges. An APD is authorized to perform airman certification in one type of aircraft for an operator's pilots who have been trained under the operator's Federal Aviation Administration (FAA)-approved training program. A DFEE in an ADE program is authorized to perform airman certification for an operator's FE candidates who have been trained under the operator's FAA-approved training program.

B. Limitations.

1) Evaluation of any applicant by an APD/DFEE when the examiner has instructed that student or when the examiner has recommended the applicant, is not recommended and must be approved by the POI or aircrew program manager (APM) on a case-by-case basis.

2) APDs/DFEEs may not conduct FAA knowledge tests, special medical evaluations, tests for waivers, or any test for competency under Title 49 of the United States Code (49 U.S.C.) § 44709 (formerly Section 609a of the Federal Aviation Act of 1958 (FA Act)). Applicants for such tests must be referred to the APM or the local district office, Flight Standards District Office (FSDO)/certificate management office (CMO).

C. Designation as an Examiner Outside of an ADE Program. An individual's designation as an APD/DFEE does not prevent the individual from obtaining a designation as an examiner in another program or capacity. When an APD/DFEE holds a designation, the privileges and limitations that may be exercised outside of the ADE program must be specified on the COA and LOA. The privileges and limitations listed on the COA issued outside an ADE program do not apply to the ADE program.

13-108 SELECTION OF AN APD/DFEE.

A. Eligibility Requirements. The following apply to the selection of APD and DFEE candidates:

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1) Must be employed by the operator either full-time, part-time, or under contract to the operator.

2) Must possess the appropriate airman certificate, class rating, and type rating, if applicable.

3) Must be an FAA-approved proficiency check pilot or check FE, as applicable, for the operator for the aircraft in which the APD/DFEE candidate is to perform examiner duties. To perform examiner duties in an aircraft in flight, APD candidates must also be an FAA-approved line check pilot—all seats and proficiency check pilot—aircraft for the operator for that aircraft.

4) Should have served as a check pilot or check FE for a minimum of 1 year (APD candidates—preferably 6 months as a proficiency check pilot) before designation as an APD/DFEE. (Check pilot/check FE experience in other types of aircraft and in service with other operators may be credited. Crediting of past experience, including length of time and type of check pilot/check FE, is at the discretion of the POI and APM.)

5) Must possess an above-average level of knowledge, ability, and experience.

6) Must have a good record of compliance with Title 14 of the Code of Federal Regulations (14 CFR) (isolated and unrelated violations or incidents are not disqualifying).

B. Evaluation of Qualifications. The APD/DFEE candidate must submit a complete statement of professional qualifications on FAA Form 8710-6, Examiner Designation and Qualification Record. The APM must review the qualifications to determine whether the candidate meets the requirements and standards for an APD/DFEE designation. If the candidate is eligible, the APM may recommend to the POI that the candidate be designated as an APD/DFEE. An APD/DFEE selection must be agreed upon by the APM, the POI, and the operator.

13-109 APD TRAINING AND EVALUATION. The APM must train and evaluate the prospective APD/DFEE on APD/DFEE duties and responsibilities as follows:

A. Training. Inspectors should ensure that the APD/DFEE is trained and evaluated in at least the following areas:

- The knowledge, ability, and skill requirements for the original issuance of the airline transport pilot (ATP) certificate and added ratings, as applicable (FE certificate and added rating for DFEE candidates);
- The procedures, methods, and techniques associated with administering the required certification tests;
- The responsibilities, authority, and limitations of an examiner under 14 CFR;
- The use of FAA forms and job aids associated with the particular APD/DFEE function; and
- The administrative procedures and supervisory relationships that exist in an ADE program.

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NOTE: The POI and the APMs must stress to examiner candidates that in performing their duties as an APD/DFEE, they are representatives of the Administrator and responsible to the Administrator. Prospective APDs/DFEEs must understand that company politics, economics, union loyalties, and seniority issues are not relevant when certificating airmen.

B. Evaluation. After formal training, an APD/DFEE candidate must observe the APM or, at the POI's discretion, another inspector or examiner in conducting a complete oral test, flight test, the necessary briefings, and the completion of the certification paperwork. The APM must then observe and evaluate the APD/DFEE candidate in conducting at least one complete oral test and complete flight test, including the necessary briefings and certification paperwork for the certificate or added rating involved.

13-110 SUPERVISION AND ADMINISTRATIVE CONTROL OF APDs/DFEEs. The APM assigned to a particular aircraft type is responsible for the supervision of APDs and DFEEs who conduct airman certification activities for that aircraft type. Inspectors should evaluate the supervisory and administrative process, taking into account the following:

A. Working Relationships. An APM observes and counsels APDs and DFEEs. An APM should emphasize to APDs and DFEEs appropriate methods for handling applicants, maintaining desired test standards, and completing and processing certification and Program Tracking and Reporting Subsystem (PTRS) paperwork. An APM should endeavor to maintain a working relationship with each APD and DFEE which promotes the examiner's confidence in the performance of their duties and in their interactions with their assigned APM. An APM must conduct regular meetings with the program's APDs and DFEEs for the purpose of maintaining these effective working relationships. During the APD/DFEE meetings, a close and continuing dialogue for the clarification of problem areas should be developed. Special meetings should be held when there is any change to FAA airman certification requirements, policies, or procedures affecting the particular APD/DFEE or the program in general. An APM should attend crewmember safety and standardization meetings held by the operator.

B. APD/DFEE Supplies and Materials. An APM must ensure that APDs and DFEEs have continuing access to the following materials, including current amendments and additional supplies, as needed:

- Order 8900.1, Volumes 5 and 13.
- All appropriate job aids.
- FAA Form 8710-1, Airman Certificate and/or Rating Application (Pilot).
- FAA Form 8400-3, Application for an Airman Certificate and/or Rating (FE).
- FAA Form 8060-4, Temporary Airman Certificate.
- FAA Form 8060-5, Notice of Disapproval of Application.
- FAA Form 8000-36, Program Tracking and Reporting Subsystem (PTRS) Data Sheet, which may be overprinted to facilitate standardization of data entered into the system.

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13-111 CERTIFICATE-HOLDING DISTRICT OFFICE (CHDO) APD/DFEE ADMINISTRATIVE FILES. The CHDO will maintain a file on each APD/DFEE. Inspectors must ensure that the CHDO file contains the following documents for each APD/DFEE:

- FAA Form 8710-6, Examiner Designation and Qualification Record, for original issuance and each renewal.
- FAA Form 8430-9, Certificate of Authority, for original issuance and each renewal.
- LOA for original issuance and each renewal, change of authority, and change of limitations.
- FAA Form 8000-5, Certificate of Designation.
- Documentation of the candidate's airman certificates and any history of accidents, incidents, or enforcement action contained in the Safety Performance Analysis System (SPAS).
- A summary of annual activity from the PTRS for each renewal.
- Periodic surveillance reports (in PTRS).
- Any pertinent correspondence.

13-112 PROCESSING INITIAL APD/DFEE DESIGNATIONS.

A. APM Responsibilities. When processing an initial APD/DFEE designation, the APM must ensure that all requirements for designation have been met. The APM must prepare all of the necessary additional paperwork. The APM must complete the back of FAA Form 8710-6 and sign the space labeled "Inspector's Signature." The APM must enter the words "Aircrew Program Designee" or "Designated Flight Engineer Examiner" and the aircraft type in the space labeled "Type of Designation" under the "Regional Office Action" block. The APM must record the APD/DFEE designation number under the space labeled "Certificate of Authority Issued" in the space titled "No." The expiration date is the last day of the month that is 1 year from the date of designation. The "DO to Serve Under" space should be left blank by the APM.

B. POI Approval. The POI, or an inspector authorized to act for the POI, must indicate approval by completing the first line of the block labeled "District Regional Office Action" on FAA Form 8710-6 and then sign in the appropriate space. POIs, or authorized inspectors, must also sign FAA Form 8000-5, FAA Form 8430-9, and the LOA. The originals of these forms must be issued to the APD/DFEE, and copies must be retained in the APD/DFEE's file in the CHDO.

C. APD Designation Numbers (Examiner Designation Numbers). For APDs and DFEEs, the airman's certificate number coupled with the applicable four-character designator for the operator may be used in all instances when an Examiner Designation Number may be called for (e.g., 123456789DALA for an APD/DFEE at Delta Airlines). The four-character suffix will allow for differentiation between programs when there is more than one ADE program within a CHDO.

13-113 RENEWAL OF APD DESIGNATIONS. APD/DFEE designations must be renewed every 12 calendar-months as follows:

A. Renewal Date. The renewal date is 1 month prior to the expiration date. An APD/DFEE may not conduct certification tests after the expiration date.

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B. Renewal Application. See Volume 13, Chapter 1, Section 2, paragraph 13-37 for renewal procedures. In order to renew a designation, an APD/DFEE must submit the following documentation to the APM:

- The expiring FAA Form 8430-9;
- A newly completed FAA Form 8710-6; and
- Evidence of having attended, during the past 12 calendar-months, at least one APD/DFEE safety meeting or a briefing conducted by the APM (such as a notation on the back of the FAA Form 8430-9, signed by the APM).

C. Annual Observation. At least once within the year preceding an APD/DFEE's renewal, the examiner must be observed conducting a complete certification. The observation is made by the APM or by another appropriately rated inspector designated by the APM or POI. Preferably, this observation should take place within the 120-day period before the current designation expires (PTRS code 1672). To complete the observation, the APD/DFEE must conduct at least one oral examination and one complete flight evaluation. When an examiner designation is renewed, the day and month will normally remain the same, and only the year will be changed.

NOTE: If it is acceptable in an operator's approved training program for the entire proficiency or flight check to be accomplished in a full flight simulator (FFS), then the APM is not required to observe the APD/DFEE in the aircraft for a renewal.

D. APM and POI Responsibility. Before renewing an APD/DFEE designation, the APM and POI must determine whether the APD/DFEE's services have been satisfactory, whether the APD/DFEE's level of activity warrants a redesignation, and whether the APD/DFEE's services continue to be needed. The examiner's level of activity may be determined from the PTRS.

E. Processing a Renewal. The administrative steps for renewal are the same as those outlined for original designation (see paragraph 13-112).

13-114 AMENDMENT OF APD/DFEE DESIGNATIONS. An APD/DFEE may be issued only one FAA Form 8430-9. An APD/DFEE's examining authority should normally be cancelled when the APD/DFEE enters transition training on a new aircraft type. The POI may designate a former APD/DFEE, provided the following actions have been completed:

A. Pilot in Command (PIC)/FE Training. The APD/DFEE must have completed the operator's approved PIC or FE ground and flight training for the new aircraft. The APM must determine whether the designee has accumulated sufficient experience on the new aircraft to accumulate an above-average level of knowledge of its systems and operations.

B. Check Pilot/Check FE Training. An APD must have completed the operator's check pilot training and be approved as a proficiency check pilot for the new aircraft. A DFEE must have completed the operator's check FE training and be approved as a check FE for the new aircraft.

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C. Interview and Review. The APM for the new aircraft must hold an interview with the APD/DFEE to establish an appropriate working relationship and review the administrative processing (paperwork/documentation) procedures for certification activities.

D. Oral Examination/Flight Evaluation. The APM for the new aircraft must observe the APD/DFEE conducting at least one complete oral examination and complete flight evaluation, as appropriate to the certificate or type rating involved, on the new aircraft type.

E. Issuance of New Designation. The administrative steps for the issuance of the new designation are the same as those outlined for initial designation (see paragraph 13-112).

13-115 PROCESSING APD/DFEE CERTIFICATION PAPERWORK. An APD/DFEE must forward the airman certification paperwork to the CHDO for review, processing, and transmittal to the Airmen Certification Branch (AFS-760). The paperwork must be accepted and processed only by the CHDO and not by any other district office. Use of the Integrated Airmen Certification and/or Rating Application (IACRA) program for processing applications is highly encouraged.

A. APD/DFEE Responsibilities. An APD/DFEE must complete the airman certification paperwork in accordance with the requirements of Volume 5, Chapters 1, 3, and 4, as applicable. An APD/DFEE will complete the PTRS data sheet for each evaluation function conducted. An APD/DFEE is responsible for the accurate, complete, and timely submission of certification paperwork. Satisfactory fulfillment of this responsibility is a condition for continued designation as an APD/DFEE.

B. APM Responsibilities. An APM is responsible for training each APD/DFEE in correct documentation procedures.

13-116 REVIEW OF APD/DFEE's DECISION. If an airman is dissatisfied with an APD/DFEE's decision, the airman may appeal to an APM for a reevaluation. The airman must submit the appeal in writing and indicate the reasons for protesting the APD/DFEE's decision. The APM must review the matter and decide if reevaluation is warranted. If a reevaluation is granted, a new application must be completed, and the entire evaluation must be reaccomplished by an FAA inspector.

13-117 TERMINATION OF APD/DFEE DESIGNATIONS. An APD/DFEE designation may be terminated or canceled for cause by the POI at any time. See Volume 13, Chapter 1, Section 2 for applicable procedures.

RESERVED. Paragraphs 13-118 through 13-135.

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