
EBOOK VOLUME 12. SURVEILLANCE

TABLE OF CONTENTS

VOLUME 12. SURVEILLANCE

CHAPTER 1. GENERAL SURVEILLANCE/INSPECTION POLICIES AND PROCEDURES	
Section 1. Surveillance Policies and Procedures	5
Section 2. Inspection Practices and Procedures	20
Section 3. GACA Activity Report (GAR) Reporting Procedures	24
CHAPTER 2. COMMON PART 121, 125, 133, 135 AND 145 INSPECTIONS	
Section 1. Ramp Inspection for Part 121, 125 and 135	25
Section 2. Spot Inspection of an Operator's Aircraft for Part 121, 125, 133 and 135	47
Section 3. Ground Deicing/Anti-Icing Inspection for Parts 121, 125 and 135	54
Section 4. Detect Unapproved Parts Inspection for Parts 121, 125, 133, 135 and 145	60
Section 5. Detailed Process/Task Inspection for Parts 121 and 125	65
Section 6. Refueling Procedures Inspection for Parts 121, 125, and 135	70
Section 7. Evaluate/Inspect Outsource Maintenance Organization Facility for Part 12174 and 125	
CHAPTER 3. COMMON PART 121 AND 135 INSPECTIONS	
Section 1. Cargo Loading Inspection for Part 121 and 135	88
Section 2. Trip Records Inspection for Part 121 and 135	99
Section 3. Manuals Inspection (Operations) for Part 121 and 135	106
Section 4. Proficiency and Competency Check Inspection for Part 121 and 135	110
Section 5. Line Check Inspection for Part 121 and 135	121
Section 6. Crew Member and/or Dispatcher Records Inspection for Part 121 and 135	124
Section 7. Training Program Inspection (Operations) for Part 121 and 135	129
Section 8. Operational Control Inspection for Part 121 and 135	136
Section 9. Station Facilities Inspection for Part 121 and 135	163
Section 10. Maintenance Facility Inspection for Part 121 and 135	176
CHAPTER 4. COCKPIT AND CABIN ENROUTE INSPECTION FOR PARTS 121, 125 AND 135	
Section 1. Cockpit En-Route Inspection for Parts 121, 125 and 135	183
Section 2. Over-Water En-Route Inspection for Part 121 and 135	203
Section 3. Cabin En-Route Inspection for Parts 121 and 125	209
CHAPTER 5. PART 91 INSPECTIONS	
Section 1. Inspection of a Part 91 Operator	229
Section 2. Ramp Inspection (Operations) for Part 91	238
Section 3. Inspect an Approved Aircraft Inspection Program for Part 91	245
Section 4. Sport Parachute Activities Surveillance	250

EBOOK VOLUME 12. SURVEILLANCE

CHAPTER 6. PART 121 INSPECTIONS

Section 1. Evaluation of an Operator's Management of Significant Changes	254
Section 2. Pilot-In-Command (PIC) Operating Experience Observation for Part 121	282
Section 3. Approved Reliability Program Inspection for Part 121	285
Section 4. Extended Operations (ETOPS) Inspection for Part 121	297
Section 5. Detailed In-Process/Task Inspection of Essential Maintenance Providers for Part 121	315
Section 6. Aging Airplane Inspection for Part 121	326
Section 7. Maintenance Records Inspection for Part 121	331
Section 8. Monitor Continuous Airworthiness Maintenance Program (CAMP) for Part 121	341

CHAPTER 7. PART 125 INSPECTIONS

Section 1. Trip Records Inspection for Part 125	358
Section 2. Crewmember Records Inspection for Part 125	362
Section 3. Station Facility Inspection for Part 125	368
Section 4. Base Inspection for Part 125	375
Section 5. Airplane Inspection Program Inspection for Part 125	384
Section 6. Maintenance Records Inspection for Part 125	387

CHAPTER 8. PART 133 INSPECTIONS

Section 1. Base Inspection for Part 133	397
Section 2. Ramp Inspection (Operations) for Part 133	408
Section 3. Congested Area Operation Inspection (Operations) for Part 133	417
Section 4. Banner Towing Operations Inspection	420
Section 5. Motion Picture/Television Filming Production Event Inspection	426

CHAPTER 9. PART 135 INSPECTIONS

Section 1. Base Inspection for Part 135	441
Section 2. Maintenance Records Inspection for Part 135	445
Section 3. Surveillance of an Aircraft Inspection Program for Part 135	452

CHAPTER 10. RESERVED

Reserved	456
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CHAPTER 11. PART 141 INSPECTIONS

Section 1. Pilot School Facility Inspection for Part 141	457
Section 2. Pilot School Aircraft Inspection for Part 141	464

CHAPTER 12. PART 142 INSPECTIONS

Section 1. Training Center, Satellite and Remote Site Inspection for Part 142	467
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CHAPTER 13. PART 145 INSPECTIONS

EBOOK VOLUME 12. SURVEILLANCE

Section 1. Certificate Requirements Inspection for Part 145	473
Section 2. Station Record System Inspection for Part 145	476
Section 3. Manual System Inspection for Part 145	482
Section 4. Housing and Facilities Inspection for Part 145	487
Section 5. Tools and Equipment Inspection for Part 145	491
Section 6. Technical Data Inspection for Part 145	497
Section 7. Quality Control System Inspection for Part 145	503
Section 8. Parts and Material Program Inspection for Part 145	509
Section 9. Personnel Inspection for Part 145	514
Section 10. Training Program Inspection for Part 145	519
Section 11. Maintenance Process Inspection for Part 145	524
Section 12. Authorization for Work Away From Its Fixed Location Inspection for Part 145	529
Section 13. Contract Maintenance Program Inspection for Part 145	535
Section 14. Maintenance/Alteration Requirements Inspection for Part 145	540
Section 15. In-Depth Inspection for Part 145	546
Section 16. Providing Essential Maintenance Before, During, and After a Labor Dispute or Bankruptcy Inspection for Part 145	566
CHAPTER 14. PART 147 INSPECTIONS	
Section 1. Inspection of Part 147	574
CHAPTER 15. MISCELLANEOUS PART 61, 91, 121, 125, 135, 141 AND 145 SURVEILLANCE/INSPECTIONS	
Section 1. Certificated Flight Instructor Surveillance for Parts 61 and 141	581
Section 2. Flight Instructor Refresher Clinic Inspection	593
Section 3. Air Ambulance Aircraft Inspections	600
Section 4. Observing Air Carrier Operations from Air Traffic Service (ATS) Facilities	608
Section 5. Problematic Use of Psychoactive Substances by Flight Crewmembers	610
Section 6. Transportation of Oxygen Generators (Chemical) for Parts 121, 125, 135 and 145	612
Section 7. Inspect Communications Stations	614
Section 8. Aviation Event Surveillance (Operations)	617
Section 9. Air Show/Air Race Surveillance (Airworthiness)	635
Section 10. Monitor Mechanic, Repairman and Inspection Authorization Holder	641
Section 11. Avionics Test Equipment Inspection	644
Section 12. Altimeter Setting Sources Inspection	648
Section 13. Special Equipment or Test Apparatus Evaluation	650

EBOOK VOLUME 12. SURVEILLANCE

Section 14. Inspect a Repair Facility Accomplishing Composite Maintenance and Repairs	654
Section 15. Ultralight Vehicle Operations Surveillance	660
Section 16. Light-Sport Repairman Training Facilities Inspection	665
CHAPTER 16. PART 127 INSPECTIONS	
Section 1. TBD	667
CHAPTER 17. PART 129 INSPECTIONS	
Section 1. Safety Assessment of Foreign Aircraft (SAFA)	668
CHAPTER 18. FLIGHT RECORDER INSPECTION	
Section 1. Flight Data Recorder Inspection	677
Section 2. Cockpit Voice Recorder Inspection	684
CHAPTER 19. SAFETY MANAGEMENT SYSTEM (SMS)	
Section 1. Background	687
Section 2. Guidelines for Conducting Routine SMS Surveillance	688
CHAPTER 20. PRODUCTION CERTIFICATE HOLDERS	
Section 1. TBD	696
CHAPTER 21. AERODROMES	
Section 1. TBD	697
CHAPTER 22. AIR NAVIGATION SERVICE PROVIDERS	
Section 1. TBD	698

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 1. GENERAL SURVEILLANCE POLICIES AND PROCEDURES

Section 1. Surveillance Policies and Procedures

12.1.1.1. INTRODUCTION.

A. Background. The Civil Aviation Law authorizes the General Authority of Civil Aviation (GACA) to conduct surveillance of certificate holders in order to ensure compliance with the General Authority of Civil Aviation Regulations (GACARs). Specifically, Article 17 and Article 83 of the Law which permits the President to:

- “*Authorized representatives of the Authority ... enter offices and premises of national and foreign air carriage companies and establishments, as well as air freight and aircraft ground service companies and agencies to inspect them and monitor the implementation of the conditions of the licenses and permits issued thereto for the performance of the activities thereof...*”
- “*Said representatives shall have the right to access any documents as may be deemed necessary to perform said inspection and may seize any documents found to be in violation of the provisions of this Law, licenses or permits issued to said companies or agencies or instructions issued by the Authority*”
- “*The Authority may inspect aircraft in order to verify airworthiness thereof, and may, if necessary, suspend airworthiness certificates and issue the necessary instructions therefore in accordance with controls and procedures set forth in the Regulations.*”

The Civil Aviation Law also authorizes the GACA to take actions (e.g. amend, suspend, revoke) against certificates issued by the GACA if the certificate holder has failed or is unable to meet or maintain the required standards. In addition to the Civil Aviation Law, the GACAR parts include sections that require certificate holders to grant access to the President (and his authorized representatives) in order to make any necessary inspections to ensure compliance with the regulations.

B. Surveillance is one of the most significant duties of the GACA. Surveillance is a duty and responsibility of all aviation safety inspectors (Inspectors) and is carried out in order to ensure the continued compliance of certificate and license holders with the GACARs. Information

EBOOK VOLUME 12. SURVEILLANCE

generated from the surveillance programs permits the GACA to act upon deficiencies which affect or have a potential effect on aviation safety.

- 1) For an organization to receive certification, the organization is required by regulation to publish manuals (e.g. Operations Manual (OM), Repair Station Manual (RSM), Quality Control Manual (QCM), Maintenance Manual (MM)) which clearly explain how the organization intends to meet the requirements of the standards and regulation under which the organization will be operating. The manuals are reviewed during the GACA certification activities to ensure that the means to achieving compliance with regulatory requirements is referenced and documented.
- 2) Once certificated, the organization's manuals form regulatory standards to which the organization will be evaluated. If for any reason process and/or procedure specified in a manual are inadequate or are not being complied with by organization personnel, such deficiencies must be brought to the attention of the organization for rectification. Moreover, non-conformance with other regulatory requirements must also be brought to the attention of the organization. Where a non-conformance is identified during an inspection, a finding will be assigned citing examples of the deficiencies, corrective actions will be implemented and follow-up will be conducted in accordance with the process specified in this process.
- 3) Checklists, forms, reports and material are designed to provide Inspectors and organizations with guidance information in effort to accurately assess an organization level of conformance with regulatory requirements. Checklists may be general in nature or refer to more specialized checklists, forms or guidance material. Inspectors may also supplement these checklists with information contained in other authoritative publications as required.

12.1.1.3. OBJECTIVE OF SURVEILLANCE PROGRAMS. The broad aim of the GACA surveillance program is to ensure that all significant aspects of a certificate holder's procedures and practices are evaluated on a continuing basis. The GACA surveillance program encompasses a number of elements that, as a total surveillance package, provides for thorough and ongoing assessment of the certificate holders' degree of compliance with the GACAR. The GACA surveillance program includes the following elements:

- Scheduled audits and inspections performed in accordance with a surveillance plan that is derived from the GACA surveillance policy
- Inspections performed as part of certificate renewals

EBOOK VOLUME 12. SURVEILLANCE

- Periodic random inspections
- Special purpose inspections when condition warrant

12.1.1.5. PLANNING AND EXECUTING SURVEILLANCE PROGRAMS. The GACA surveillance program is derived from several policies that relate to the planning and execution of surveillance activities and the resolution of identified safety concerns and non-compliances. These policies are described in the associated surveillance work processes.

A. There are four phases involved in the GACA surveillance program. These phases are as follows:

- Phase One - Developing the surveillance plan by determining the types of surveillance activities necessary and the frequency of those surveillance activities
- Phase Two - Executing the surveillance plan by conducting the surveillance activities
- Phase Three - Analyzing surveillance data in order to: 1) categorize the severity of safety deficiencies observed in order to establish appropriate timeframes for corrective actions; and 2) identify trends in order adjust the surveillance plan if necessary
- Phase Four – Resolution of identified safety deficiencies and non-compliances

B. Phase One: Developing a Surveillance Plan. An annual surveillance plan shall be developed for each functional area of GACA Safety and Air Transport (S&AT). The annual surveillance plan shall be derived from the GACA surveillance planning policy. The GACA surveillance planning policy is established by the Assistant Vice President, S&AT, with input from his staff. The surveillance planning policy is reviewed periodically for effectiveness and compliance with international norms.

1) The GACA surveillance planning policy is stated below:

- a) The broad aim of the GACA surveillance program is to ensure that all significant aspects of a certificate holder's procedures and practices are evaluated at least once in every 12-month period.
- b) Surveillance of holders of new certificates / privileges shall be undertaken within 6

EBOOK VOLUME 12. SURVEILLANCE

months of the date of the original certificate / privilege issuance in order to re-evaluate the certificate holder's procedures and practices.

c) Surveillance tasks and frequencies shall be established with consideration of available resources and the safety benefit derived from the surveillance activities. The broad objective shall be to maximize the safety benefit of our available surveillance resources.

d) Surveillance frequencies shall be increased if risk indicators show that higher frequencies are warranted.

e) Surveillance frequencies may be decreased with GACA management approval if surveillance results indicate a high degree of voluntary compliance and a well-established risk management system within the certificate holder. In no cases may surveillance frequencies exceed 24 months however.

f) Scheduled surveillance activities shall be supplemented with periodic random surveillance.

g) Sampling may be used when inspecting large amounts of similar data (e.g. pilot training records, maintenance task cards, etc.) however statistically reliable methods shall be used when selecting sample sizes.

2) The surveillance planning policy requires that the surveillance plan be developed with consideration of specific risk indicators associated with the certificate holder. Risk indicators to consider include the following:

- Aspects of the certificate holder's surroundings that may lead to or trigger a systemic failure with the potential of creating an unsafe condition. Examples include:

- o Age of Fleet

- o Varied Fleet Mix/Configuration

- o Change in Aircraft Complexity

- o Outsourcing (Maintenance, Training, Ground Handling)

EBOOK VOLUME 12. SURVEILLANCE

- o Seasonal Operations
- o Relocation/Closing of Facilities
- o Lease Arrangements
- Compliance and performance history of the certificate holder over time, including:
 - o Enforcement Actions
 - o Accidents/Incidents/Occurrences
 - o Third Party Audits (e.g. IOSA, IASA)
 - o Self-Disclosures
 - o Complaints
- Organizational and environmental factors the certificate holder cannot directly control, but can manage effectively to improve system stability and safety. Examples include:
 - o Changes in key management personnel
 - o Difficult Financial Conditions
 - o Turnover in Personnel
 - o Rapid Growth/Downsizing in Workforce
 - o Merger or Takeover
 - o Labor-Management Relations
- Organizational and environmental factors that the certificate holder can directly control. Examples include:
 - o New or major changes to programs, infrastructure or procedures

EBOOK VOLUME 12. SURVEILLANCE

o Reorganization

3) The annual surveillance plan is to be based on available resources and should be designed to achieve the maximum safety benefit possible.

4) The annual surveillance plan is to be developed for each certificate holder. The surveillance plan must be presented in a format that includes the following items as a minimum:

- Name of certificate holder (or other kind of authorizing document, if applicable)
- Type of certificate(s) held (or other kind of authorizing document, if applicable)
- Number and type of all planned surveillance tasks

C. Phase Two: Executing the Surveillance Plan.

1) In conducting surveillance and documenting the outcomes, GACA is able to assess and demonstrate an organization's level of conformance to regulatory requirements. Adherence to the guidance herein is imperative to ensure inspection and/or audit policies and procedures are uniformly applied. All surveillance activities shall be executed in accordance with the GACA surveillance execution policy which is stated below:

- All GACA surveillance shall be conducted in accordance with the processes and procedures described in this handbook
- All identified non-compliances shall be recorded, in writing, using the relevant GACA forms
- Notwithstanding 2) below, at the discretion of the Inspector, identified non-compliances that are not intentional, error based and which pose only very low risk to aviation safety may be resolved by way oral counseling
- All surveillance records shall be retained in the certificate holder's file at the GACA office

2) To maintain overall effectiveness of safety oversight or audit activity, the GACA approach to each organization must be one of transparency, with a high degree of

EBOOK VOLUME 12. SURVEILLANCE

professionalism, using experience, skills and communication as essential ingredients. The aviation community must view the GACA surveillance program as one that is fair and equitable in its application.

D. Phase Three: Analyzing Surveillance Data.

1) Background.

- a) Analyzing surveillance data gathered from surveillance reports is an essential element of the GACA surveillance program. By analyzing identified safety concerns and non-compliances, GACA is able to ensure that both short term and long term safety risks are identified and categorized and that the GACA approach to resolution will be appropriate to the seriousness of the situation.
- b) The analysis of surveillance reports and other safety intelligence allows the GACA to identify patterns, weaknesses, deficiencies in the aviation system. The analysis can also help identify causes and possible remedies.
- c) In view of the increasing complexity of modern operating techniques, aircraft and equipment, there is a continuing need to review the scope of inspections and related surveillance techniques and procedures in order to better evaluate specific areas of interest and ensure effective use of GACA Inspector resources.
- d) The analysis of the surveillance data is carried out on three levels in accordance with the GACA policy on the analysis of identified safety concerns.

2) Policy.

- On the first level, immediately after identifying a safety concern or non-compliance, the Inspector shall categorize the severity of safety deficiencies observed in order to establish appropriate timeframes for corrective actions
- On the second level, at periodic intervals (e.g. monthly, quarterly), Supervisory Inspectors shall analyze identified safety concerns and non-compliances within their jurisdictions in order to identify negative trends in the safety performance of their assigned certificate holders

EBOOK VOLUME 12. SURVEILLANCE

- On the third level, at periodic intervals (e.g. quarterly, annually), Directors/Managers shall analyze identified trends in the safety performance of their assigned sectors of aviation in order to affect improvements in regulations, guidance material, regulatory oversight programs and other aviation sectors

3) Process.

- a) *First Level Analysis: (Inspectors)*. After any surveillance activity has been completed, the Inspector shall analyze the surveillance findings to categorize the seriousness of the findings and identify trends (both positive and negative) in the safety performance of the certificate holder. The Inspector shall inform the assigned Supervisory Inspector of all findings categorized as serious. In addition, for non-compliances, the Inspector should assess the type of conduct that led to the non-compliance in order to establish whether non-compliance is of a repetitive or intentional nature. The Inspector shall inform the assigned Supervisory Inspector of all findings categorized as repetitive or intentional.
- b) *Second Level Analysis: (Supervisory Inspector)*. Periodically, the Supervisory Inspector shall analyze the surveillance data for their assigned certificate holder's jurisdictions in order to identify negative trends in the safety performance of their assigned certificate holders. Supervisory Inspectors should include other relevant data pertaining to the certificate holder's operation such as past surveillance findings, incident and accident reports and data, enforcement actions and surveillance data from third parties. Depending on the results of the analysis, it may be appropriate to increase or decrease the rate at which inspections are conducted during subsequent surveillance programs or initiate additional surveillance activities. It may be appropriate to change the emphasis or objectives of surveillance programs by changing the types and numbers of inspections to be conducted. The Supervisory Inspector shall inform their Director/Manager of all safety significant situations.
- c) *Third Level Analysis: (Directors / Managers)*. Periodically, Directors/Managers shall analyze identified trends in the safety performance of their assigned sectors of aviation in order to affect improvements in regulations, guidance material, regulatory oversight programs and other aviation sectors.

NOTE: Directors / Managers shall inform the Vice President of all significant safety situations.

EBOOK VOLUME 12. SURVEILLANCE

E. Phase Four: Resolution of Identified Safety Concerns and Non-Compliances. Inspectors and Supervisory Inspector must use good judgment when deciding on the most effective course of action to be taken. The appropriate course of action depends on many factors. There are also many actions which can be taken, such as: taking no action; informal discussion with the operator; formal written request for corrective action; withdrawal of GACA approval of a program, manual, or document; and, initiation of an incident or enforcement investigation. Results of the evaluation of surveillance data and the operator's response to the course of action taken should be considered. Part of the fourth phase of a surveillance program is for the Vice President to determine, as a result of the information gathered from the program, what will become the inspection requirements for subsequent surveillance programs. Depending on the situation, it may be appropriate to increase or decrease the rate at which inspections are conducted during subsequent surveillance programs. It may be appropriate to change the emphasis or objectives of surveillance programs by changing the types and numbers of inspections to be conducted.

NOTE: GACA Compliance and Enforcement policies and processes can be found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies.

12.1.1.7. SURVEILLANCE PLANNING AND EVALUATION RESPONSIBILITIES.

A. GACA Inspectors receive the authority to conduct audits and/or inspections through their delegated authority and official credentials document issued under the authority of the President. Inspectors are also delegated the authority to exercise regulatory powers when encountering a situation where there is an immediate threat to aviation safety. Such powers include detention of aircraft and suspension of certificates and other authorizing documents issued under the GACAR. Inspectors are expected to use judgment and tact in dealing with such matters where the overriding factor is safety to persons and property. Although an Inspector cannot permit a threat to safety to persist, it is important that the person or organization under review be advised of the specific safety concerns and be given the opportunity to address the situation voluntarily. Whenever possible, the Inspector's manager shall also be consulted in advance of any significant safety action.

1) Supervisory Inspectors shall:

- Prepare an annual surveillance plan for each assigned certificate holder

EBOOK VOLUME 12. SURVEILLANCE

- Provide regular updates to their managers on the implementation status of their surveillance plan
- 2) Directors/Managers shall:
- Approve, in writing, the surveillance plan and any significant changes to it
 - Notify GACA senior management if the approved surveillance plan does not conform to the GACA Surveillance Policy
 - Provide regular updates to the GACA senior management on the implementation status of their surveillance plan.

12.1.1.9. DETERMINING INSPECTION REQUIREMENTS. When developing a surveillance plan, Supervisory Inspectors must determine the number and types of inspections that should be conducted. For a routine surveillance program, there should be a representative number of each type of inspection. Circumstances or results from previous inspections, however, may indicate that a specific area should receive emphasis and therefore more inspection activity of a particular type. Conversely, surveillance data may indicate that certain types of inspections are ineffective or that fewer inspections can effectively accomplish the objective.

A. When determining the number of inspections that should be accomplished, the Supervisory Inspector should consider the complexity and size of the operator. A method which can be used to consider complexity and size is to separate an operation into homogenous groups. Examples of homogenous groups include pilots, mechanics, aircraft, cabin crew members, training and qualification records, line stations, and various types of manuals. Each of these groups can be considered separately when determining the number and types of inspections that should be conducted.

B. When considering a large homogenous group, such as trip records, certain statistical methods may be useful to Inspectors for determining how many inspections to conduct.

1) A specific number, or sampling, of a group can produce a 95% confidence level that a sufficient number of inspections will be accomplished to properly assess the compliance status of that particular area. Figure 12.1.1.1 provides guidance for sample sizes (the number of inspections) of varying population sizes (the homogenous group) that will result in a statistical confidence level of 95%:

EBOOK VOLUME 12. SURVEILLANCE

Figure 12.1.1.1 Number of Inspections Recommended Achieving 95% Confidence Level

Population of Homogeneous Group	Recommended Number of Inspections
Up to 100	50% (50)
200	40% (80)
400	35% (140)
500	33% (165)
1000	28% (280)
2000	16% (322)
3000	11% (330)
4000	8.8% (352)
5000	7.7% (355)

2) Samples may be drawn from the homogenous group in several ways. To be acceptable for statistical evaluation, however, the sample to be inspected must be random. The following is one method of conducting a random sampling. A sampling interval must first be established. For illustration purposes, an interval of nine will be used. Out of the first nine items of a rank (airman records in alphabetical order), the first item is chosen at random. Thereafter every ninth record is selected. For example, if a sample size of 330 records is selected from a homogenous group of 3,000 records (see Figure 12.1.1.1), the sampling interval would be every ninth record (3,000 divided by 330). If an inspection starts at a randomly selected record between 1 and 9, and continues with the selection of every ninth record thereafter, a 95% confidence level will be produced. When a method such as this is used, all elements (records) in the group are given equal chance of inclusion in the sample.

C. Each type of inspection varies in its basic objective. Many types of inspections, however, share common events or elements in the aviation system. For example, pilots are evaluated during en route inspections, IOE inspections, simulator training sessions, and required checks. Supervisory Inspector should consider this when developing surveillance programs. For

EBOOK VOLUME 12. SURVEILLANCE

example (and to illustrate the use of the previous figure), if an operator employs 200 flight crew members (PICs, SICs, and FEs), it is recommended that at least 40% (or 80 flight crew members) be evaluated during a surveillance program. If the objective is to inspect this number of flight crew members, the inspection may include any combination of en route inspections, IOE observations, training sessions, line checks, or proficiency checks.

D. The information in Figure 12.1.1.1 is guidance only and should not be construed as a mandatory method for determining the number of inspections to be conducted during a surveillance program. The primary objectives of a surveillance program are for the inspectors to conduct inspections which are qualitative and which provide effective results. The quality of inspections must be given a higher priority than the actual number of inspections conducted. Inspections that produce qualitative information which can be systematically evaluated and used as a basis for taking effective courses of action are more important than the number of inspections conducted. Supervisory Inspector should review and when necessary revise their surveillance programs semi-annually and annually to adjust them according to national surveillance programs and to ensure that the programs are effective and are meeting planned objectives.

12.1.1.11. EVALUATION OF INSPECTION RESULTS.

A. Inspector evaluation of inspection results is a key phase of any surveillance program. The primary purpose of evaluating surveillance data is to identify both negative and positive trends as well as deficiencies which are not associated with an apparent trend. Supervisory Inspector should determine the appropriate course of action to take based on their evaluation of inspection results. This evaluation of inspection results is also important in terms of redefining and implementing subsequent surveillance objectives and inspection activity. Supervisory Inspector must adopt systematic methods that permit accurate and effective evaluation of inspection results. Additionally, other related information from incidents, accidents, enforcement actions and other sources may provide valuable trend information which may relate to the operator's safety and compliance status. Supervisory Inspector should use all available inspection results and related information to decide on appropriate courses of action. For example, if in a series of ramp inspection reports a trend of deficiencies in the use of the MEL is identified, but the cause of these deficiencies cannot be identified, the Supervisory Inspectors may need to adjust the emphasis on the types of inspections conducted. In this case, training program inspections, manual inspections, or flight control inspections (flight release procedures) may be more effective in determining the cause of these deficiencies. In this example, the Supervisory Inspector's initial course of action might be to informally discuss the identified

EBOOK VOLUME 12. SURVEILLANCE

trend of deficiencies with the operator. After other types of inspection results identify the cause of the deficiencies, the Supervisory Inspector can take an effective course of action by formally requiring the operator to correct the problem at its source. The previous example is illustrative only of how surveillance information may be used to determine the courses of action to be taken for a particular situation.

B. There are several broad areas of interest in a surveillance program that, when organized into more defined elements, will provide an effective and comprehensive evaluation of surveillance data. The GACA Activity Report (GAR) is an effective tool which the Supervisory Inspector should use during the ongoing evaluation of a surveillance program. Inspection results are available in ad hoc formats or in established report formats for real-time and comprehensive data analysis (see section 2 of this chapter). The GAR is designed to process surveillance data by organizing the data into broad areas of interest and by collecting elements of information within those broad areas. The GAR is discussed in detail in Section 2 of this chapter.

1) This system provides for the organized retrieval of surveillance data that is related to a broad area of interest. In the GAR these broad areas of interest are referred to as “primary areas.” The GAR, as currently designed, organizes the broad areas of interest (primary areas) under the following primary groups:

- Air Carrier Operations
- General Aviation Operations
- Air Navigation Services (ATC/Airspace)
- Aerodromes
- Air Agencies
- Air Carrier Airworthiness
- General Aviation Airworthiness
- Aircraft ATA Codes
- GACA Designees

EBOOK VOLUME 12. SURVEILLANCE

- Crew Members

2) Each primary area is further organized by a key word list of elements of information. This framework provides a method for Supervisory Inspector to use when organizing surveillance information for effective trend evaluation strategies. The following is a list of the major titles of the elements of information (relating to operations) that are currently designed into the GAR:

- Personnel
- Manuals
- Records/Reports
- Training
- Facilities/Equipment
- Conformance (compliance with regulations and safe operating practices)
- Operations (flight conduct)
- Flight Control
- Key Personnel Programs
- Management
- Aircraft

3) Each of these elements of information provides for a database of related information obtained from inspection reports. By grouping inspection results from related types of inspections, any developing trends or areas that will require an appropriate course of action (or additional emphasis) during subsequent inspections, are more readily identified. For example, surveillance data related to the element of information titled “personnel” can be obtained from the following types of related inspection reports:

- o En route inspections (IOE and line checks)

EBOOK VOLUME 12. SURVEILLANCE

- o Ramp inspections
- o Proficiency check inspections
- o Training inspections
- o Other related inspections

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 1. GENERAL SURVEILLANCE POLICIES AND PROCEDURES

Section 2. Inspection Practices and Procedures

12.1.2.1. GENERAL. This section contains information on both objectives and characteristics of inspections. It contains direction and guidance on the planning and conduct of specific types of inspections in support of an overall surveillance program. This guidance applies to all aviation safety inspectors (Inspectors) who conduct inspections under General Authority of Civil Aviation Regulations (GACARs).

12.1.2.3. OBJECTIVE OF AN INSPECTION. The primary objective of any inspection is to determine that a person, an item, or a certain segment of an operation associated with air transportation meets at least the same standards that were required for initial certification or approval by the General Authority of Civil Aviation (GACA). For Inspectors to make these determinations, inspections must be conducted in an orderly and standardized manner. To accomplish this, each type of inspection must have individual objectives and be conducted each time in generally the same manner, according to the direction and guidance in this handbook and with appropriate job aids.

12.1.2.5. CHARACTERISTICS OF AN INSPECTION. As discussed in Section 1, each type of inspection is a specific event (work activity) which has the following characteristics:

- A specific work activity title and GAR activity code
- A definite beginning and a definite end
- Specific objectives to be met
- General procedures to be followed
- A report of findings

A. Each type of inspection is identified with a specific title. Also, each type of inspection is assigned a specific GAR activity code as a reference in the planning and tracking of inspection activity.

EBOOK VOLUME 12. SURVEILLANCE

B. Inspections have a definite beginning and end. They may be scheduled by an Inspector for the observation and evaluation of a specific activity, such as a proficiency check, or they may be scheduled for the evaluation of operator documents, manuals, or approved programs. A specific inspection activity may be initiated and completed in a short time or it may be initiated on one day and completed several days later with other types of work activity conducted during that time. In any case, an inspection begins when an Inspector initiates the inspection task and ends when the Inspector has completed the inspection report.

C. Inspections have general procedures that Inspectors should follow for standardization purposes. In most cases, there is a specific job aid for each type of inspection which contains lists of specific items or areas which should be observed and evaluated, when applicable, during the inspection. Examples of these job aids are included in respective sections of this chapter.

D. The primary objective of any inspection is to determine that a person, item, or segment of an operation complies or continues to comply with regulations, safe operating practices, and other established standards. Each inspection types, however, has specific objectives, which are discussed in respective sections of this chapter. An inspection is not complete until a report on the results of the inspection has been recorded. This inspection report is the key element of any inspection. Inspection must be concise, factual, and objective in reporting inspection results.

12.1.2.7. CONDUCTING AN INSPECTION. Due to the complexity of the aviation industry there are various types of inspections, each type with specific objectives. When deciding which type of inspection to conduct, Inspectors should consider the objectives of each type of inspection and determine the type most appropriate and effective for a particular situation. The decision to conduct a particular type of inspection may be based on an isolated situation, such as a complaint or an incident, or on some other information that raises a question about compliance with a regulation or safe operating practice. In most situations, however, the types of inspections that need to be conducted are determined by Managers and Supervisory Inspector during the development of surveillance programs. These determinations are based on the analyses of previously collected surveillance data, risks analysis and other related information.

A. Preparing for an Inspection. Before conducting an inspection, Inspectors should to the extent possible, familiarize themselves with a certificate holder's systems, methods, and procedures. To obtain this familiarization, Inspectors can review those sections of the certificate holder's manuals pertinent to the type of inspection to be conducted. Additional familiarization can be obtained by an Inspector questioning and discussing the operator's systems, methods and procedures with the Supervisory Inspector and with other Inspectors already acquainted

EBOOK VOLUME 12. SURVEILLANCE

with the operator. When possible, Inspectors should become aware of any previous deficiencies or negative trends by reviewing previous surveillance data pertinent to the type of inspection to be conducted. Inspectors must be acquainted with the applicable direction and guidance in this handbook for the type of inspection to be conducted. Inspectors can review the appropriate job aid as a reminder of the areas to be evaluated.

B. Advance Notice of an Inspection. Most inspections will cause some disruptions to routine operations. Responsible certificate holders understand the legal basis for GACA surveillance and are generally cooperative in responding to the needs of Inspectors during the conduct of inspections. Certificate holders are required to afford Inspectors the opportunity to conduct inspections in a manner that effectively accomplishes the objectives of the inspections. Inspectors should, however, arrange their inspection activities so they will result in a minimum amount of disruption to routine operations. In general, it is appropriate and helpful to both the certificate holder and Inspectors to provide advance notice that an inspection is to be conducted. Advance notice should be given for inspections which take operator personnel away from their normal duties, such as records inspections. Such advance notice is usually unnecessary for those inspections which result in only a minimal involvement of the certificate holder's personnel.

C. Limiting the Scope of an Inspection. Each inspection has a set of items or areas that Inspectors should observe and evaluate. Sufficient time should be allotted for effective evaluation of all the items or areas. The circumstances, under which inspections are conducted however, vary considerably. Often Inspectors will not be able to evaluate all the specified items or areas. The more important consideration is to thoroughly and qualitatively evaluate those items or areas in which the Inspector has the time and opportunity to observe. In some circumstances, it may be preferable for an Inspector to limit the scope of a particular inspection type to ensure the quality of the inspection. When an inspection is limited in scope, the Inspector should provide a comment on how it was limited, and indicate it by either recording the number or type of records or manuals evaluated, recording the general areas evaluated, or by recording the general areas not evaluated. In general, it is better to schedule sufficient time to evaluate all the items or areas specified for an inspection type. Inspections that are limited in scope, however, do serve a useful purpose and can still provide valuable information.

D. Inspector Conduct. The actions and conduct of an Inspector are subject to close scrutiny by the personnel they encounter during the performance of an inspection. Inspectors must conduct themselves as aviation professionals at all times when conducting inspections. When initiating an inspection, Inspectors shall properly identify themselves and ensure that the appropriate

EBOOK VOLUME 12. SURVEILLANCE

operator personnel are fully aware of the type and purpose of the inspection being conducted. Inspectors shall wear name tags or other appropriate identification in plain view during the conduct of the inspections. When observing or evaluating personnel during the performance of their assigned duties, Inspectors shall not intervene in a manner that could adversely hinder or preclude them from effectively performing their duties. If, however, an Inspector observes a condition that is obviously unsafe or that could potentially become unsafe, the Inspector shall immediately inform the appropriate personnel of the condition.

E. Concluding an Inspection. At the conclusion of an inspection, Inspectors should usually debrief appropriate certificate holder personnel of the inspection results. When appropriate to the type of inspection conducted, the debriefing should include a summary of the area inspected and the Inspector's findings concerning the compliance status of each area. Persons, items, or areas that were found to meet or exceed standards should also be commented on during the debriefing. Post-inspection debriefing must include an explanation of any deficiencies that were found during the inspection. Appropriate operator personnel must be informed of any areas that will require some form of follow-up action. If a regulation has been violated, Inspectors must document the non-compliance finding with the appropriate form and this finding must be transmitted to the certificate holder. Care must be taken to gather and secure any relevant evidence to support the non-compliance finding. When an Inspector is unable to debrief the appropriate operator employees on any deficiencies because those employees are not available, the Inspector should indicate in the inspection report that the operator was not briefed on the deficiencies. Isolated types of deficiencies found during an inspection can often be corrected by the certificate holder while the inspection is being conducted. Such deficiencies can be adequately resolved and closed out during the post-inspection debriefing. In these cases, however, Inspectors should record information about the deficiency and how it was corrected on the inspection report because such information is useful for trend evaluations. The preparation of the inspection report and the follow-up and closure of all identified non-compliances are the final actions that must be taken by Inspectors to conclude an inspection. All reports on specific inspections and all non-compliance records shall be retained in the certificate holder's file (see Volume 13).

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE**CHAPTER 1. GENERAL SURVEILLANCE POLICIES AND PROCEDURES****Section 3. GACA Activity Report (GAR) Reporting Procedures**

NOTE: This guidance to be developed at a later date.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 2. COMMON PART 121, 125, 133, 135 AND 145 INSPECTIONS

Section 1. Ramp Inspection for Part 121, 125, 133 and 135

12.2.1.1. GACA ACTIVITY REPORT (GAR).

A. 1622 (OP)

B. 3627 (AW)

12.2.1.3. OBJECTIVE. The objective of this task is to determine if an operator is in continuing compliance with General Authority of Civil Aviation Regulation (GACAR) Part 121, 125, 133 and 135 (as applicable). Ramp inspections provide Aviation safety inspectors (Inspectors) with the opportunity to evaluate an operation while the crew members and aircraft are on the ground. A ramp inspection is an effective method for evaluating an operator's ability to prepare both the aircraft and crew for a flight to be conducted and to determine compliance with regulations and safe operating practices. Also, when a ramp inspection is conducted after the completion of a flight, it is an effective method for determining whether the aircraft and crew were adequately prepared for the flight as well as for evaluating the operator's postflight and/or turnaround procedures and crew member and ground personnel compliance with these procedures.

12.2.1.5. INITIATION AND PLANNING.

A. This task is scheduled as part of the normal surveillance program or as a special emphasis request.

B. The ramp inspection also provides the Inspector with an opportunity to ensure that the compliance dates and requirements of new Airworthiness Directives (AD) and regulatory revisions have been met. ADs, Service Difficulty Report (SDR) Summaries, and Maintenance/Airworthiness Bulletins should be reviewed prior to the ramp inspection, when available.

12.2.1.7. MAINTENANCE RECORDS.

A. Regulations require maintenance to be recorded whenever it is performed prior to an approval

EBOOK VOLUME 12. SURVEILLANCE

for return to service. The operator's maintenance manual (MM) should describe the procedures for ensuring that these recording requirements are met, including the specific instructions on when an airworthiness release or appropriate maintenance log entry is required.

B. Operators must either correct or defer all mechanical discrepancies entered in the maintenance log using the methods identified in their MM. As a variety of manuals are used, Inspectors are advised to review the appropriate manuals before performing the inspection.

C. The Minimum Equipment List (MEL) has certain procedures and conditions that operators must meet prior to deferring the item(s).

- 1) These procedures are identified by "O," "M," and "O/M" and are normally contained in the operator's GACA-approved MEL. Sometimes the MEL references procedures from another document, such as the Dispatch Deviation Guide (DDG), etc.
- 2) When reviewing the records for MEL compliance, the Inspector must determine what procedures are required for deferral and ensure that these procedures are accomplished.
- 3) The Inspector must ensure that all applicable repetitive MEL procedures are accomplished for those items that are deferred and are continuing to be deferred through the station. These repetitive maintenance procedures must be signed off in the maintenance log as evidence that the procedures were accomplished.

12.2.1.9. DEFERRED MAINTENANCE.

A. Minimum Equipment List—Deferred Maintenance The operator's GACA-approved MEL allows the operator to continue a flight or series of flights with certain inoperative equipment. The continued operation must meet the requirements of the MEL deferral classification and the requirements for the inoperative equipment.

B. Other Deferred Maintenance.

- 1) Operators frequently use a system to monitor items that have been inspected and found to be within serviceable limits. These items are still airworthy, yet warrant repair at a later time or when items no longer meet serviceable limits. This method of deferral may require repetitive inspections to ensure continuing airworthiness of the items. Examples of items that are commonly deferred in this manner are fuel leak classifications, dent limitations, and

EBOOK VOLUME 12. SURVEILLANCE

temporary (airworthy) repairs.

2) Passenger convenience item (not safety/airworthiness related) (Non-Essential Furnishings (NEF)) deferrals should be handled in accordance with (IAW) the operator's NEF program.

C. Prompt Repairs. The maintenance program approved for an operator must provide for prompt and orderly repairs of inoperative items.

12.2.1.11. CABIN INSPECTION.

A. This inspection should be conducted immediately, when possible, without disturbing the loading and unloading of passengers. The inspection can be performed when some passengers are onboard during through-flights, but Inspectors must exercise good judgment by inspecting areas away from the passengers.

B. Bring any discrepancy to the attention of the flight crew or appropriate maintenance personnel immediately.

12.2.1.13. CARGO/PAX COMBINATION CONFIGURED AIRCRAFT.

A. Structural Damage. Inspection results have disclosed instances of significant aircraft structural damage resulting from careless loading of cargo, such as:

- Torn or punctured liners, indicating hidden damage to circumferential stringers, fuselage skin, and bulkheads
- Damaged rollers, ball mats, etc., causing significant structural damage to the floors
- Corrosion and structural damage caused by improper handling of some hazardous materials

NOTE: Observation of the proper handling of dangerous goods for those operators authorized to transport dangerous goods (TDG) by air is normally not a surveillance function of the Inspector during a ramp inspection. However, if discrepancies are noted during the ramp inspection, the Inspector should follow-up in accordance with TDG guidance found in Volume 4, Chapter 31 of this handbook. Additional guidance for cargo configured aircraft may be found in Volume 12, Chapter 3, Section 1, Cargo Loading

EBOOK VOLUME 12. SURVEILLANCE

Inspection for Part 121 and 135.

B. Cargo Containers, Pallets, and Netting. As part of their normal surveillance, Inspectors should ensure that adequate procedures are in place in the operator's manual to ensure that cargo restraint equipment conform to proper standards and are in condition to perform their intended function.

- 1) If maintenance is required on any of the type certificate (TC) or supplemental type certificate (STC) cargo containers or restraint devices, it must be accomplished in accordance with (IAW) appropriate regulations.

12.2.1.15. RAMP INSPECTION AREAS. There are five general inspection areas that can be observed and evaluated during ramp inspections. These inspection areas are as follows:

- Crew members
- Line station operations
- Aircraft
- Servicing and maintenance
- Ramp and gate condition and activity

A. The “crew members” inspection area refers to the evaluation of crew member preparation for flight and compliance with post-flight procedures. This area includes evaluations of crew member manuals and any required flight equipment, flight crew flight planning, flight crew airman and medical certificates, crew member disposition of trip paperwork, and other items that relate to crew member responsibilities.

B. The “line station operations” inspection area refers to the various methods and procedures used by the operator to support the flight, such as distribution of dispatch release, flight release, and flight locating paperwork; distribution of weather reports, pilot reports (PIREPs) and other flight planning material; passenger handling; boarding procedures; and carry-on baggage screening.

C. The “aircraft” inspection area refers to the aircraft’s general airworthiness, logbook entries, MEL compliance, carryovers, and required items of emergency and cabin safety equipment.

EBOOK VOLUME 12. SURVEILLANCE

D. The “servicing and maintenance” inspection area applies to any ongoing maintenance and servicing, such as fueling, deicing, or catering. This area is usually evaluated in detail by Inspectors (Airworthiness) when performing their ramp inspections. Inspectors (Operations) should, however, observe this area and comment on obvious deficiencies for Inspector (Airworthiness) follow-up.

E. The “ramp and gate condition and activity” inspection area refers to taxi and marshaling operations, ramp or parking area surfaces, any apparent contamination or debris, vehicle operations, and the condition and use of support equipment.

12.2.1.17. GENERAL RAMP INSPECTION PRACTICES AND PROCEDURES.

A. Ramp inspections may be conducted before a particular flight, at en route stops, or at the termination of a flight. A ramp inspection may be conducted any time an aircraft is at a gate or a fixed ramp location, provided the inspection is conducted when the crew and ground personnel are performing the necessary preparations for a flight or when they are performing post-flight tasks and procedures.

B. The operator does not have to be given advance notice that a ramp inspection is going to be conducted. Inspectors must, however, conduct inspections in a manner that does not unnecessarily delay crew members and/or ground personnel in the performance of their duties. The following areas of conduct should be observed by Inspectors during ramp inspection activities:

- 1) Inspectors should not interrupt crew or ground personnel when they are performing a particular phase of their duties.
- 2) When inspection activities require Inspectors to interact directly with the crew or ground personnel, the activities should be timed to be accomplished when the crew or ground personnel are waiting to begin another phase of their duties or after they have completed one phase of their duties and before they begin another phase.
- 3) Inspection activities must be timed so that they do not delay or interfere with passenger enplaning or deplaning.
- 4) Inspection activities should not adversely impede aircraft servicing or catering.

EBOOK VOLUME 12. SURVEILLANCE

C. Because of the wide range of inspection areas involved, ramp inspections are usually limited in scope. There are many preparatory or post-flight actions that occur simultaneously and one Inspector cannot physically observe all of these actions for a particular flight. As a result, the Inspector should vary the areas of emphasis for an inspection. For example, on one ramp inspection the Inspector may decide to observe and evaluate the pilot in command (PIC) accomplishing flight planning and the operator's methods for providing the flight crew with appropriate flight planning support. On another ramp inspection, the Inspector may decide to observe the second in command (SIC) accomplish the aircraft exterior preflight and then evaluate the aircraft's interior equipment and furnishings. As an example of a ramp inspection conducted at the termination of a flight, the Inspector may decide to inspect the aircraft's interior equipment, furnishings, and aircraft logbooks, and then evaluate the trip paperwork turned in by the crew. In this example, the Inspector may not have an opportunity to interact directly with the crew; therefore, the "crew member" inspection area would not be accomplished. Inspectors should vary both the sequence and the emphasis of the inspection areas during a ramp inspection. Inspectors should describe in their reports how the inspection was limited in scope.

D. Inspectors should use the Ramp Inspection Job Aid (Figure 12.2.1.1) when conducting ramp inspections. This job aid contains a listing of items ("reminders") that should be observed and evaluated by the Inspector during the inspection. The job aid also includes applicable GAR comment codes to facilitate the writing of the inspection report. There may be items evaluated during a ramp inspection that are not listed on the job aid. In such cases, the GAR comment code entitled "other" should be used for the appropriate inspection area. The job aid can be used to help describe how the inspection was limited in scope. The job aid can also be used to make notes during the inspection which can be transcribed later to the GAR.

12.2.1.19. SPECIFIC RAMP INSPECTION PRACTICES AND PROCEDURES.

NOTE: The inspection areas below are not all inclusive. When doing a ramp inspection, the type and scope of operation must be considered.

A. Crew Member Inspection Area. When an Inspector makes direct contact with a crew member, the Inspector should provide an official but courteous introduction, offer appropriate identification for the crew member to inspect, and inform the crew member that a ramp inspection is being conducted. If the direct contact is with a flight crew member, the Inspector should request to see the crew member's airman and medical certificates. The Inspector should review the certificates to see that they meet the appropriate requirements for both the duty position and for the aircraft for the flight to be conducted or that was just terminated. When the direct contact

EBOOK VOLUME 12. SURVEILLANCE

is with flight crew members or cabin crew members (CCMs), the Inspector should also request to examine the crew member's professional equipment. Crew member professional equipment includes any equipment that crew members are required to have according to regulation or operator policies, either on their person or that which will be available during the flight. Examples of professional equipment include: aeronautical charts, appropriate operator manuals, and operable flashlights. Inspectors should determine whether the charts and manuals carried by crew members are current. The following is a list of other items and activities that, depending on the scope of the ramp inspection, should be observed and evaluated:

- Flight crew flight-planning activities, such as review of weather, flight plans, anticipated takeoff mass and performance data, flight control requirements (dispatch release, flight release, flight locating, ATC flight plans)
- Flight crew aircraft preflight activities, such as exterior walk-around, logbook reviews, and cockpit setup procedures, including stowage of flight crew baggage and professional equipment
- Cabin crew member inspection of cabin emergency equipment and cabin setup procedures, including stowage of cabin crew member baggage and professional equipment
- Flight crew and cabin crew member post-flight logbook entries and proper use of MELs and placards
- Completed trip paperwork and the appropriate disposition of such paperwork

B. Line Station Operations Area. This area of a ramp inspection usually involves a facility (or designated area of a facility) including related ground personnel, and is commonly referred to as "line station operations." Line station operations include a designated location where crew members go to review and pick up required flight paperwork or to deposit flight reports, to send or receive communications with the operator's flight control system, and to join up with other crew members assigned to the flight. Line station operations also include gates and ramp areas where passengers and cargo are enplaned and deplaned. The following is a list of items and activities that, depending on the scope of the inspection, should be observed and evaluated in this inspection area:

- Preflight and post-flight trip paperwork, such as load manifests, flight plans, weather

EBOOK VOLUME 12. SURVEILLANCE

reports and forecasts, notices to airmen (NOTAMs), dispatch or flight release messages and operator bulletins

- Methods used by the operator to comply with MEL and CDL requirements, particularly the preflight information provided to the crew
- Adequacy of facility with respect to crew member and ground personnel use for completing preflight and post-flight responsibilities, including work areas and administrative support (such as forms, charts, and copy machines when required by company procedures)
- Usability and currency of operator manuals and aircraft performance information maintained at the line station operations area for crew and ground personnel use
- Company communication capabilities and procedures
- Passenger enplaning and deplaning including public protection procedures and carry-on baggage screening
- Cargo and baggage loading and stowage procedures and unloading procedures

C. Aircraft Inspection Area. Ramp inspections must include at least an examination of the aircraft's registration certificate, airworthiness certificate, and maintenance logbook. Inspectors should plan their ramp inspection activities so that any inspection of the aircraft's interior equipment and furnishings would be conducted either before passengers are enplaned or after they are deplaned. The following is a list of items that may be observed in this inspection area:

- Aircraft registration and airworthiness certificates
- Aircraft and cabin logbooks (or equivalent) (open discrepancies, carryover items, and cabin equipment items needing repair or replacement)
- Appropriate placarding
- Fire extinguishers (correct types, numbers and locations; properly serviced, safetied, tagged, and stowed)
- Portable oxygen bottles (correct numbers and locations; properly serviced, tagged,

EBOOK VOLUME 12. SURVEILLANCE

and stowed; condition of mask, tubing, and connectors)

- Protective breathing equipment (properly located, stowed, and sealed)
- First aid kits and emergency medical kits (correct numbers and locations; properly sealed, tagged, and stowed)
- Megaphones (correct numbers and locations; in operable condition, and properly stowed)
- Crash ax (properly located and stowed)
- Passenger briefing cards (one at each seat position; appropriate to aircraft; required information including emergency exit operation, slides, oxygen use, seatbelt use, brace positions, flotation devices; appropriate pictorials for extended overwater operations, including ditching exits, life preserver, and life or slide raft inflight location)
- Passenger seats (not blocking emergency exits; technical service order (TSO) label on flotation cushions; cushion intact; latching mechanism on tray tables; armrests have self-contained and removable ashtrays; seatbelts properly installed, operational, and not frayed or twisted)
- Passenger oxygen service units (closed and latched with no extended red service indicators or pins)
- Cabin crew member stations (operable seat retraction and restraint systems; properly secured; harnesses not frayed or twisted; seat cushions intact; headrests in correct position; passenger address (PA) system and interphone)
- Galleys (latching mechanisms - primary and secondary; tiedowns; condition of restraints; padding; proper fit of cover and lining of trash receptacles; hot liquid restraint systems; accessibility and identification of circuit breakers and water shut-off valves; non-skid floor; girt bar corroded or blocked by debris; clean stationary cart tiedowns (mushrooms); galley carts in good condition and properly stowed; lower lobe galley emergency cabin floor exits passable and not blocked by carpeting, if applicable)

EBOOK VOLUME 12. SURVEILLANCE

- Galley personnel lift, if applicable (no movement up or down with doors open; safety interlock system; proper operation of activation switches)
- Lavatories (smoke alarms; no-smoking placards; ashtrays; proper fit of cover and lining of trash receptacles; automatic fire extinguisher systems)
- Stowage compartments (mass restriction placards; restraints and latching mechanisms; compliance with stowage requirements; accessibility to emergency equipment; carry-on baggage provisions)
- Required placards and signs (seatbelt, flotation equipment placards at seats; emergency/safety equipment placards; mass restriction placards; no-smoking/seatbelt signs; no-smoking placards; exit signs and placards, including door opening instructions)
- Emergency lighting system (operation independent of main system; floor proximity escape path system; controllability from cockpit)
- Exits (general condition; door seals; girt bars and brackets; handle mechanisms; signs; placards; slide or slide raft connections and pressure indications; lights and switches)
- Main landing gear viewing ports, if applicable (cleanliness and usability)

D. Servicing and Maintenance Inspection Area. The servicing and maintenance of the aircraft may be observed at any time during the ramp inspection. The following is a list of some areas that may be observed and evaluated in this inspection area:

- Fueling procedures (ground wires in place; fuel slip properly completed; fueling personnel trained in the operator's specific procedures)
- Routine maintenance (qualifications of mechanics, repairmen or service agents; appropriate logbook entries)
- Deicing procedures (compliance with company procedures; proper glycol/water ratios and temperatures; avoidance of engine/APU inlets; removal of all snow and ice; trailing and leading edges free of snow and ice and covered completely with deicing

EBOOK VOLUME 12. SURVEILLANCE

fluid)

- Correct procedures used by service contractors (caterers; cleaners; lavatory and water servicing personnel; correct use of switches and controls)
- Vehicle operation near aircraft (general condition and proper servicing of vehicles and equipment)

E. Ramp and Gate Inspection Area. During ramp inspections, Inspectors should observe and evaluate the ramp and gate surface condition as well as any support activities being conducted during an inspection. Inspectors should observe vehicular operations on the ramp and around gate areas and other aircraft operations during marshaling, taxiing, or towing operations. Inspectors should report any condition that appears to be unsafe or could potentially be unsafe. The following is a list of some items that should be observed and evaluated in this inspection area:

- Ramp, apron, and taxiway surfaces (general condition; cracks; holes; uneven surfaces)
- Contamination debris (Foreign object debris (FOD); fuel, oil, or hydraulic spills; sand, snow and ice accumulations; taxi lines; gate markings; signs; signals)
- Construction (appropriate barriers; signs; markings; flags)
- Vehicular operations (conducted safely around aircraft and gate areas by qualified personnel)

12.2.1.21. PERFORMING THE RAMP INSPECTION.

A. This inspection must be accomplished without interfering with the turnaround of the aircraft. The following list includes some of the activities that could delay the turnaround time if interfered with:

- Boarding and deplaning of passengers
- Servicing
- Fueling

EBOOK VOLUME 12. SURVEILLANCE

- Maintenance
- Baggage handling
- Any other operator activity

B. The Inspector must immediately bring any discrepancies noted to the attention of appropriate personnel to allow the operator the opportunity to take corrective action without interrupting the flight schedule. The Inspector must verify that all corrective actions taken were IAW the requirements of the operator's applicable manual.

12.2.1.23. PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites.

- Experience working with similar type aircraft
- Knowledge of the operator's operating manual, if applicable

B. Coordination. This task may require coordination between Airworthiness, Cabin Safety and Operations Inspectors.

12.2.1.25. REFERENCES, FORMS, AND JOB AIDS.

A. References.

- GACAR Part 21, 23, 25, 27, 29, 43, 45, 47, 91, 121, 125, 133, 135
- International Civil Aviation Organization (ICAO) Annexes 6 and 8
- Operator's manual(s)

B. Forms. GACA Activity Report (GAR)

C. Job Aids.

- Figure 12.2.1.1, Ramp Inspection Job Aid

EBOOK VOLUME 12. SURVEILLANCE

- Figure 12.2.1.2, Interior Inspection Guidelines
- Figure 12.2.1.3, Exterior Inspection Guidelines

12.2.1.27. PROCEDURES.

A. Begin the Inspection. Begin the ramp inspection IAW the GACA surveillance program or other directives.

B. Prepare for the Inspection.

- 1) Coordinate with the operator's scheduling personnel or crew, select the flight to be inspected, and determine the type of equipment and ground time needed.
- 2) Determine recent problem areas that were identified for that type of aircraft, if any.
- 3) Determine if recent regulatory changes and AD requirements affect the aircraft to be inspected.

C. Conduct the Exterior Inspection, as Applicable. Perform this inspection IAW Figure 12.2.1.3.

D. Interview the Flight Crew. Introduce yourself and describe the purpose and scope of the inspection.

E. Inspect the Aircraft Maintenance Records.

- 1) Prior to departure of the aircraft, ensure that all open discrepancies from the previous flight are resolved IAW the operator's manual.
- 2) Review the maintenance records to determine if repetitive maintenance problems exist, which might indicate a trend.
- 3) Ensure that all MEL items are deferred IAW the provisions of the operator's GACA-approved MEL.
 - a) Review the operator's GACA-approved MEL to determine if conditions, procedures, and placarding requirements were accomplished to defer specific items

EBOOK VOLUME 12. SURVEILLANCE

correctly.

- b) Note the date when an item was first deferred to determine if the maximum allowed length of deferral was exceeded. Accomplish this by examining maintenance record pages, the deferred maintenance list, or deferred maintenance placards or stickers.
- 4) Ensure that an airworthiness release, maintenance record entry, or appropriate approval for return to service was made after the completion of maintenance.
- 5) Ensure that the maintenance record contains the following for each discrepancy
 - Description of the work performed or a reference to acceptable data
 - Date of completion of work
 - Name or other positive identification of the person approving the work
 - Name of the person performing work, if outside the organization
 - Signature, certificate number, and kind of certificate, if work has been performed satisfactorily

F. Conduct the Interior Inspection, as Applicable. Perform this inspection IAW Figure 12.2.1.2.

G. Debrief the Operator, Personnel or Flight Crew. Inform the flight crew or appropriate personnel that the inspection has been completed. Discuss the discrepancies brought to the operator's attention during the inspection.

H. Examine the Maintenance Record Entries. Ensure that the operator has recorded discrepancies noted during this inspection. If time is available, monitor the operator's corrective actions.

I. Analyze Findings. Analyze each finding to determine if the discrepancies are the result of improper maintenance and/or missing or inadequate maintenance/inspection procedures.

12.2.1.29. TASK OUTCOMES.

EBOOK VOLUME 12. SURVEILLANCE

A. Complete the GAR.

B. Completion of this task can result in the following:

- Satisfactory inspection
- Communicate concerns/findings to the Principal Inspector and/or the applicable GACA management
- Follow-up inspection for a particular discrepancy

C. If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies.

12.2.1.31. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement or other job tasks.

EBOOK VOLUME 12. SURVEILLANCE

12.2.1.1. Ramp Inspection Job Aid

GAR CODE: 1622	OPERATOR	FLT NO.	A/C REG MARKS	MAKE	MODEL/SERIES
DATE:					
PIC NAME:	CERT #	BASE:	FROM:	TO:	RESULTS:
U = UNACCEPTABLE; P = POTENTIAL; I = INFORMATION; E = EXCEEDS					
CREWMEMBERS		COMPANY DIRECTIVES		CCM STATION	
KNOWLEDGE		<ul style="list-style-type: none"> • MEL Procedures 		<ul style="list-style-type: none"> • Retracts 	
QUAL/CURRENCY		<ul style="list-style-type: none"> • Adequacy of Facility 		<ul style="list-style-type: none"> • Condition 	
CERT/RATINGS		<ul style="list-style-type: none"> • Ground Communications 		<ul style="list-style-type: none"> • P/A & Interphone 	
MANUAL AVAILABILITY		<ul style="list-style-type: none"> • Flight Communications 		GALLEYS	
MANUAL CURRENCY		<ul style="list-style-type: none"> • Gate Agent Procedures 		<ul style="list-style-type: none"> • Latch Mechanisms 	
REG. EQUIPMENT		<ul style="list-style-type: none"> • Passenger Handling 		<ul style="list-style-type: none"> • Restraints/Tie-downs/Covers 	
CREW COMPLEMENT		<ul style="list-style-type: none"> • Protection of the Public 		<ul style="list-style-type: none"> • Debris/Corrosion 	
PREFLIGHT		<ul style="list-style-type: none"> • Cargo/Baggage Loading/Stowage 		LAVATORIES	
• Flight Plan		<ul style="list-style-type: none"> • Security 		<ul style="list-style-type: none"> • Smoke Alarm 	
• Weather Review		Other Remarks		<ul style="list-style-type: none"> • Signs/Lights 	
• NOTAMS	AIRCRAFT/EQUIPMENT			<ul style="list-style-type: none"> • Extinguishers 	
• Fuel Requirements	REQ. CERT/PLACARDS			STOWAGE AREAS	
• T/O Date	LOGBOOKS			<ul style="list-style-type: none"> • Latch Mechanisms 	
• Dispatch Release/Flight Release	<ul style="list-style-type: none"> • Open Items 			<ul style="list-style-type: none"> • Access to Equip. 	
• A/C Preflight	<ul style="list-style-type: none"> • Carryovers 			EMERGENCY LIGHTING	
• Logbook Review	<ul style="list-style-type: none"> • Cabin Items 			<ul style="list-style-type: none"> • Operable 	
• Cockpit Setup	MEGAPHONES			<ul style="list-style-type: none"> • Floor Systems 	
• Crew Baggage	FIRE EXTINGUISHERS			EXITS	

EBOOK VOLUME 12. SURVEILLANCE

	<ul style="list-style-type: none"> • CCM Inspection Of Cabin Equip. 	<ul style="list-style-type: none"> • Correct Type 	<ul style="list-style-type: none"> • Control/Seals
	<ul style="list-style-type: none"> • Cabin Setup 	<ul style="list-style-type: none"> • Number 	<ul style="list-style-type: none"> • Girt Bar and Brackets
	<ul style="list-style-type: none"> • Passenger Boarding 	<ul style="list-style-type: none"> • Serviced 	<ul style="list-style-type: none"> • Signs/Symbols
	<ul style="list-style-type: none"> • Carry-on Baggage 	<ul style="list-style-type: none"> • Location 	<ul style="list-style-type: none"> • Rafts/Lanyards
	<ul style="list-style-type: none"> • Handicapped Passengers 	PORT. 02 BOTTLES	MLG VIEWING PORTS
	<ul style="list-style-type: none"> • Pushback/Powerback 	<ul style="list-style-type: none"> • Number 	OTHER REMARKS
	<ul style="list-style-type: none"> • POSTFLIGHT 	<ul style="list-style-type: none"> • Serviced 	SERVICING AND MAINTENANCE
	<ul style="list-style-type: none"> • Coordination With Ground Crew 	<ul style="list-style-type: none"> • Location 	FUELING
	<ul style="list-style-type: none"> • MEL's/CDL's 	<ul style="list-style-type: none"> • Masks/Hoses 	ROUTINE MAINTENANCE
	<ul style="list-style-type: none"> • Placards 	PBE	DEICING
	<ul style="list-style-type: none"> • Trip Papers 	<ul style="list-style-type: none"> • Properly Stowed 	CONTRACT SERVICES
	<ul style="list-style-type: none"> • Fuel Remaining 	<ul style="list-style-type: none"> • Sealed 	GROUND SERVIC EQUIP.
	<ul style="list-style-type: none"> • Post Flight Log Book Entries 	PAX BRIEFING CARDS	RAMP/GATE CONDITIONS & ACTIVITY
	<ul style="list-style-type: none"> • CCM Remaining On Board with Passengers 	<ul style="list-style-type: none"> • At Each Seat 	COND OF RAMP OR GATE AREAS
	Other Remarks	<ul style="list-style-type: none"> • Req. Info. 	DEBRIS OR SPILLS
LINE STATION OPERATIONS		PAX SEATS	CONSTRUCTION
	TRIP PAPERS	<ul style="list-style-type: none"> • Emergency Exits 	OBSTRUCTIONS
	<ul style="list-style-type: none"> • Load Manifests 	<ul style="list-style-type: none"> • Condition 	VEHICLE OPS
	<ul style="list-style-type: none"> • Flight Plans 	<ul style="list-style-type: none"> • Ash Trays 	MARKING
	<ul style="list-style-type: none"> • Weather Reports 	<ul style="list-style-type: none"> • Seatbelts/Trays 	LIGHTING
	<ul style="list-style-type: none"> • Dual Slips 	PAX Oxygen SVC UNIT	SNOW/ICE CONTROL
	<ul style="list-style-type: none"> • Dispatch Release/Flight Release 	<ul style="list-style-type: none"> • Operational 	OTHER REMARKS
		<ul style="list-style-type: none"> • Service Plans 	

EBOOK VOLUME 12. SURVEILLANCE

12.2.1.2. Interior Inspection Guidelines

A. Airworthiness and Registration Certificates. Ensure the following:
1) Airworthiness and registration certificates are current and valid.
2) Both certificates contain the same model, serial, and registration marks.
3) Temporary registration is current.
4) Signatures are in permanent type ink.
B. Flight Deck. Inspect the following:
1) Instrument security and range markings.
2) Windows (delamination, scratches, crazing, and general visibility).
3) Emergency equipment.
4) Medical kit (if located on flight deck).
5) Seat belts and shoulder harnesses (TSO marking, metal to metal latching, and general condition).
6) Check the following if using cockpit jump seat: <ul style="list-style-type: none"> a) Jump seat oxygen system. Turn regulator on and select 100% oxygen. b) Interphone system. Select Com 1 and Com 2 to ensure systems are working.
7) When the most forward jump seat is in the cabin, coordinate with the crew for connecting the headset and adapter cables.
8) Ensure that the jump seat is serviceable and that seat belt and shoulder harnesses are available.
C. Cabin. Inspect the following:
1) Lavatory. Ensure the following: <ul style="list-style-type: none"> a) Fire extinguisher system is installed in sealed trash containers. b) Smoke detection system is installed. c) Trash containers are sealed according to applicable AD(s). d) No Smoking" placards are posted. e) Ashtrays are available outside the lavatory.
2) Cabin crew member seats. <ul style="list-style-type: none"> a) Pull the jump seat down to ensure seat retracts (those in path of exits). b) Inspect seat belts for TSO marking, metal to metal latching and general condition.
3) Cabin emergency equipment. All equipment requiring periodic inspections should have an inspection date marked on it. Inspect the following: <ul style="list-style-type: none"> a) Cabin crew member flashlight holder. b) Slide containers to ensure containers are properly marked for content. Check pressure of slide inflation bottle, if visible. c) Medical kit (if not checked on flight deck). d) First aid kit. e) Emergency oxygen (proper pressure and security). f) Megaphone(s) (security and general condition).

EBOOK VOLUME 12. SURVEILLANCE

g) Fire extinguishers (security, pressure, and seal).
h) Life raft storage markings (if raft is required).
i) Emergency briefing cards (random sample).
j) General condition of emergency floor path lighting system.
k) Placement of all "Emergency Exit" signs.
l) Presence and legibility of "Emergency Exit" operation instructions.
m) Placarding for location of all emergency equipment.
n) Life preservers (vests).
4) Passenger seats. Ensure the following:
a) Seats adjacent to emergency exits do not block exit path.
b) Seats are secure in seat track (random sample).
c) Seat breakaway pressure is in accordance with operator/program manager's maintenance program (random sample).
d) "Fasten Seat Belt While Seated" placards are in view from all seats.
e) Seat belts have metal-to-metal latches and are in good general condition (random sample).
5) Galleys/service centers. Inspect the following:
a) Trash bin lids for fit.
b) Storage compartment restraints.
c) Stationary cart tie-downs.
d) Lower lobe equipment/restraints.
e) Lift operation.
f) Galley supply stowage.
6) Overhead baggage compartments. Check for mass restriction placards and the doors for proper latching, when applicable.
D. Cargo Compartment. Inspect the following:
1) Ensure the following:
a) Cargo compartment fire protection is appropriate for its classification.
b) Cargo liner is free from tears and/or punctures. If these are noted, inspect structure behind liner for damage (stringers, frames, etc.). Ensure sealing tape is proper type and in good condition.
c) Cargo door is free of fluid leaks and structural damage.
d) Fuselage door structure and sill is free of damage.
e) Smoke detectors are in satisfactory condition.
f) Lighting is operable and protective grills are installed.
g) Cargo flooring is free from structural or other damage.

EBOOK VOLUME 12. SURVEILLANCE

h) Pallet positions/compartments are placarded for position identification and mass limitations.
2) Inspect pallet system, if applicable. Ensure the following:
a) Ball mats are serviceable, e.g., no broken or missing balls.
b) Forward, aft, and side restraints are serviceable.
c) Roller assemblies are secure and have no missing or broken rollers.
3) Ensure the 9G forward restraint net is serviceable, if applicable.
4) Ensure that cargo restraints for bulk loaded cargo are adequate, if applicable.
5) Inspect cabin mounted equipment.
6) Inspect fire extinguishers for inspection due dates and pressure.
7) Inspect load manifest for dangerous goods. If present, determine crew knowledge of the following:
a) Location and labeling of dangerous goods.
b) Special requirements, if required.
c) If proper paperwork is on board.
8) Ensure PIC is aware of the following responsibilities:
a) Inspection of cargo to ensure proper load distribution.
b) Ensuring loads do not exceed compartment or position limits.
c) Ensuring loads are being properly restrained.

EBOOK VOLUME 12. SURVEILLANCE

12.2.1.3. Exterior Inspection Guidelines

A. Accompany a flight crew member during the exterior inspection, if possible, and inspect the following, as applicable:
1) <i>Landing gear and wheel well areas.</i> Check for the following:
a) Any indication of wear, chafing lines, chafing wires, cracks, dents, or other damage.
b) Structural integrity of gear and doors (cracks, dents, or other damage).
c) Hydraulic leaks (gear struts, actuators, steering valves, etc.).
d) Tire condition.
e) Tire pressure (if pressure indicators are installed).
f) Wheel installation and safety locking devices.
g) Wear, line security, leaks, and installation of brakes.
h) Corrosion.
2) <i>Fuselage and pylons.</i> Inspect the following:
a) Structure for cracks, corrosion, dents, or other damage.
b) Fasteners (loose, improper, missing).
c) Condition of radome.
d) Condition of pitot tubes.
e) Static ports (cleanliness and obstructions).
f) Stall warning devices and other sensors.
g) Antennas (security and indications of corrosion).
h) Stains or other indications of leaks.
i) Lavatory servicing areas (evidence of fresh blue water streaks).
j) Cargo compartments for integrity of fire-protective liners (no holes or unapproved tape used for repairs).
k) Emergency exit identification/markings.
l) Registration marking (legibility).
m) All lights (general condition, broken lenses, etc.).
3) <i>Wings and pylons.</i> Inspect the following:
a) Structure for cracks, corrosion, dents, or other damage.
b) Leading edge (dents and/or damage in line with engine inlets).
c) Leading edge devices (when open, actuator leaks, general condition of lines, wires, and plumbing).
d) Evidence of fuel leaks (operator must prove leak is within established limits).
e) All lights (general condition, broken lenses, etc.).
f) Flaps (cracks, corrosion, dents, and delamination).
g) Flap wells (general condition of lines, wires, and plumbing).
h) Static eliminators (number missing).
i) Ailerons and aileron tabs (cracks, corrosion, dents, delamination).
j) Missing, loose, or improperly secured access door/inspection panels and blowout panels.

EBOOK VOLUME 12. SURVEILLANCE

4) <i>Engines.</i> Inspect the following:
a) Intake for fan blade damage and oil leaks.
b) Ring cowl for missing or loose fasteners.
c) Cowling doors for security and proper fit.
d) Lower cowling for evidence of fluid leaks.
e) Exhaust for turbine and tailpipe damage and evidence of fluids.
f) Reverser doors for stowage and security, and evidence of leaks.
g) Access doors for security.
5) <i>Propellers.</i> Inspect the following:
a) Leading edge of propeller for cracks, dents, and other damage.
b) Deicer boots for signs of deterioration and security.
c) Spinners for security, cracks, and evidence of fluid leaks.
6) <i>Empennage.</i> Inspect the following:
a) Leading edge for dents.
b) All lights (general condition, broken lenses, etc.).
c) Missing static discharge eliminators.
d) Elevator, rudder, and tabs (cracks, corrosion, dents, and delamination).
e) Evidence of elevator and rudder power unit hydraulic leaks.
7) <i>Ground safety.</i> Inspect the following:
a) Positioning of support vehicles.
b) Fueling of aircraft to include the following:
1. Refueling pressure.
2. Condition of refueling unit (leaks, filter change dates, exhaust system, etc.).
3. Grounding.
4. Fire protection.
5. General fueling procedures.
c) General condition of ramp to include the following:
1. Provisions for grounding.
2. FOD on ramp.
3. Fuel spills.
4. General housekeeping/cleanliness.
5. Passenger control.
6. Fire protection.
8) <i>Baggage.</i> Observe loading and unloading of baggage compartments to include the following:
a) Baggage restraining system.
b) Load distribution.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 2. COMMON PART 121, 125, 133, 135 AND 145 INSPECTIONS

Section 2. Spot Inspection of an Operator's Aircraft for Part 121, 125, 133 and 135

12.2.2.1. GACA ACTIVITY REPORT (GAR).

A. 3628 (AW) (Spot)

B. 3647 (AW) (Structural Spot)

12.2.2.3. OBJECTIVE. This section provides guidance for observing and analyzing in-progress maintenance operations for compliance with specific methods, techniques, and practices in the operator's inspection and maintenance programs.

12.2.2.5. GENERAL.

A. Definition. *Work Package:* Contains job task control units developed by the operator for performing maintenance/inspections. A typical work package may include the following:

- Component change sheets
- Inspection work cards
- Non-routine work cards
- Appropriate sections of the maintenance manual (MM)
- Engineering Orders (EO)

B. General Authority of Civil Aviation (GACA) Inspection Personnel. It is important that aviation safety inspectors (Inspectors) (Airworthiness) are familiar with the type of aircraft to be inspected before performing the inspection. This can be accomplished through on-the-job training.

12.2.2.7. INITIATION AND PLANNING.

EBOOK VOLUME 12. SURVEILLANCE

A. Initiation. Spot inspections can be scheduled as part of the annual surveillance work program or may be initiated whenever a problem is noted, including deficiencies noted during other types of inspections.

B. Planning.

- 1) The number of spot inspections in the surveillance program depends on the type and number of operator aircraft. After determining the type of aircraft to be inspected, confirm the aircraft availability and scheduled maintenance functions with operator personnel.
- 2) If the maintenance to be observed is known, review the operator's maintenance procedures manual to become more familiar with the maintenance task. Review the following:
 - Required Inspection Items (RII), if applicable
 - Forms used to document maintenance task
 - Latest manual revision and date
 - Special tools and equipment used to perform the maintenance task
 - Any other manual requirements relating to the maintenance task
- 3) If the maintenance procedures manuals are not available in the GACA office, review the applicable sections of the operator's maintenance manual at the facility prior to performing this task.
- 4) Examining previous inspection findings provides the Inspector with background information regarding problem areas found during other spot inspections. This information can give an indication of how effective past corrective actions were in resolving previously identified problem areas.
- 5) Airworthiness Directives (ADs), Service Difficulty Report (SDR) summaries, Maintenance Bulletins, and GAR entries should be reviewed, when available, so as to become familiar with current service difficulty information. While performing the spot inspection, ensure that any conditions described in this information do not exist on the aircraft.

EBOOK VOLUME 12. SURVEILLANCE

6) Spot inspections not derived from the planned surveillance program may be performed. There are many situations while performing other surveillance activities that afford the opportunity to perform spot inspections. For example, if a discrepancy is found during a ramp inspection that requires maintenance, a spot inspection of that maintenance function could be performed.

12.2.2.11. MAINTENANCE RECORDS. During performance of the spot inspection, special attention should be paid to the following areas, as applicable:

- AD's current status, including the method of compliance
- Overhaul records, including documentation containing the overhaul details and replacement time
- Major repair/alteration classifications and the use of approved data
- Replacement time of life-limited parts

12.2.2.13. PERFORMING THE SPOT INSPECTION.

A. Selecting a Maintenance Task.

1) Discuss with the operator's maintenance supervisor what maintenance is currently being performed to determine what portions of that current maintenance/inspection should be observed.

2) Special emphasis should be placed on observing maintenance tasks that involve RII items. Problem areas to look at include the following:

- Persons performing inspections outside of their authorizations or limitations
- RII items not being properly identified or accomplished

B. Performance Standards.

1) Each operator has a maintenance/inspection program for its individual maintenance operations. For maintenance to be performed on the operator's aircraft, there must be

EBOOK VOLUME 12. SURVEILLANCE

corresponding provisions and procedures in the operator's MM.

2) Each operator should have special procedures in the manual that ensure that persons outside of the organization perform maintenance in accordance with (IAW) the operator's maintenance manual.

C. Discrepancies Noted During Surveillance. When deviations from accepted procedures are noted, it must be brought to the attention of maintenance management that corrective action must be taken immediately. Discrepancies noted during the inspection may require follow-up at a later time.

12.2.2.15. STRUCTURAL SPOT INSPECTIONS. During the observance of a "heavy inspection," Inspectors must pick an inspection area where maintenance has been started and where there could be possible fatigue or corrosion problems (especially an area that is not usually open/exposed to inspection, such as under the galley or lavatories).

A. If inspecting an area where maintenance is in-progress, the following should be evaluated:

- While performing their job functions, are personnel accomplishing their job task per the work package?
- Do the inspections and procedures required by GACAR § 121.469 provide the necessary guidance to evaluate and respond in a timely manner to structural fatigue and corrosion?

B. If inspecting an area where maintenance has already been accomplished, the following should be evaluated:

- Are there any structural fatigue or corrosion problems evident?
- If there are, were they identified by the person(s) responsible for that area?
- If they were identified, was corrective action initiated and completed?
- Is there an AD applicable to this problem? If there is an AD, what is the status of that AD?

NOTE: While inspecting these areas that are not normally accessible, look for evidence of

EBOOK VOLUME 12. SURVEILLANCE

structural major repairs. If a major repair was accomplished, review the approved data for that repair.

12.2.2.17. PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. Previous experience working with an operator with similar types of aircraft.

12.2.2.19. REFERENCES, FORMS, AND JOB AIDS.

A. References:

- GACAR Part 39, 43 and 121
- Operator's Maintenance Manual and inspection work packages

B. Forms. GACA Activity Report (GAR).

C. Job Aids. None.

12.2.2.21. PROCEDURES.

A. Initiate Spot Inspection.

B. Select Appropriate Aircraft for Inspection. Determine the following from the operator's maintenance schedules:

- Aircraft availability
- Aircraft type
- Type of maintenance being performed

C. Prepare for the Inspection. Review the following:

- MM procedures for maintenance being performed (if available)
- Operations Specifications (OpSpecs) time limitations, when applicable to the maintenance task

EBOOK VOLUME 12. SURVEILLANCE

- Previous inspection findings
- Applicable maintenance alert bulletins
- SDR Summary
- Any new regulation and/or AD requirements affecting the aircraft to be inspected

D. Perform the Spot Inspection.

- 1) Identify yourself to the maintenance supervisor and discuss the nature of your inspection.
- 2) Discuss with the maintenance supervisor/person in charge the status of the selected maintenance task.
- 3) Select a particular maintenance task within the work package. If possible, include a maintenance task that has been designated by the operator as an RII.
- 4) Ensure that current maintenance procedures are available to the person(s) performing the work by accomplishing the following:
 - Asking maintenance personnel for the maintenance procedures used to accomplish the work
 - Recording the date of the maintenance procedures being used to perform the maintenance task for future comparison with the maintenance manual master copy
- 5) Ensure that the maintenance is performed according to established procedures by comparing actual performance to the operator's approved maintenance/inspection manual procedures.
- 6) Ensure that the proper tools are being used by accomplishing the following:
 - Observing that special tools referenced in the maintenance manual are being used
 - Checking calibration due dates on precision tools, measuring devices, and testing equipment requiring calibration

EBOOK VOLUME 12. SURVEILLANCE

- 7) Ensure that the operator has the facilities to properly perform the maintenance task.
- 8) Ensure that systems being maintained are not exposed to environmental conditions that could contaminate or damage components.
- 9) Ensure that the maintenance recording is accomplished according to the operator's recordkeeping system.
- 10) Note any maintenance task deficiencies and include any copies of the documents that revealed the deficiencies.
- 11) For those maintenance tasks involving RII functions, determine that the persons observed performing these functions are appropriately certificated, authorized, and qualified.

E. Analyze the Findings. Evaluate inspection findings to determine if discrepancies exist. Discuss the results with the operator.

12.2.2.23. TASK OUTCOMES.

A. Complete GAR.

B. Completion of this task can result in the following:

- Satisfactory inspection
- Communicate concerns/findings to the Principal Inspector and/or Director, Airworthiness Division
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

12.2.2.25. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, other job tasks, and/or additional coordination is required between the Inspector and the Office Manager.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 2. COMMON PART 121, 125, 133, 135 AND 145 INSPECTIONS

Section 3. Ground Deicing/Anti-Icing Inspection for Parts 121, 125 and 135

12.2.3.1. GACA ACTIVITY REPORT (GAR).

A. 1637 (OP)

B. 3625 (AW)

12.2.3.3. OBJECTIVE. General Authority of Civil Aviation Regulation (GACAR) §§ 121.1213, 125.465 and 135.671, state that no pilot may takeoff an airplane when frost, ice, or snow is adhering to its wings, control surfaces, engines, or propellers. The primary objective of ground-deicing/anti-icing inspections is to determine if the operator has practices and procedures in place that will meet the requirements of the applicable regulations on ground-deicing/anti-icing. To fully determine that the operator has such procedures in place and is effectively using these procedures, the aviation safety inspector (Inspector) will inspect specific areas of the ground-deicing/anti-icing procedures. The areas required to be inspected will depend on the applicable regulations and operations specifications (OpSpecs).

12.2.3.5. GENERAL GROUND DEICING/ANTI-ICING INSPECTION PRACTICES AND PROCEDURES. Prior to the beginning of the deicing/anti-icing season, Inspectors should become familiar with the operators' ground-deicing/anti-icing plans and the aerodromes' ground-deicing/anti-icing plans. Volume 4, Chapter 15, provides background information, policy, direction, and guidance on the approval of ground-deicing/anti-icing procedures and the prerequisites for conducting ground-deicing/anti-icing surveillance. Inspectors should familiarize themselves with the information in these sections prior to the ground-deicing/anti-icing season.

12.2.3.7. GROUND DEICING/ANTI-ICING INSPECTION AREAS. The Inspector should observe the following general inspection areas to determine an operator's compliance with the ground-deicing/anti-icing rules.

- Flight crew
- Maintenance and ground personnel

EBOOK VOLUME 12. SURVEILLANCE

- Training program
- Aerodrome deicing/anti-icing plan and secondary deicing/anti-icing areas
- Equipment
- Fluids

A. Flight Crew. Inspectors should ensure that the flightcrew is familiar with the operator's deicing/anti-icing procedures, has been trained and/or tested in the operator's procedures, and is familiar with the aerodrome ground deicing/anti-icing plan and any remote deicing/anti-icing capabilities. Procedural areas include the following:

1) Hold over time (when appropriate):

- Specific weather conditions
- Temperature
- Type of fluid used

2) Procedures for communication:

- Deicing/anti-icing start time
- Documentation
- Air traffic control (ATC) coordination
- Current weather information
- Verification of deicing/anti-icing

3) Procedures for pre-takeoff check, pre-takeoff contamination check, or Outside-the-Aircraft Check (OTAC) (see Volume 4, Chapter 15).

4) Computation of latest takeoff time.

EBOOK VOLUME 12. SURVEILLANCE

B. Maintenance and Ground Personnel. Inspectors should ensure that the maintenance and ground personnel are familiar with the operator's deicing/anti-icing program and have been trained and/or tested in the operator's procedures. Procedural areas include the following:

1) Knowledge of aircraft manufacturer's ground-deicing/anti icing procedures:

- Knowledge of deicing/anti-icing methods and equipment
- Knowledge of pre-takeoff check, pre-takeoff contamination check, or OTAC

2) Hold over time (when appropriate):

- Specific weather conditions
- Temperature
- Type of fluid used

3) Cockpit Communications:

- Type of fluid being used
- Deicing/anti-icing start time
- Confirmation that deicing/anti-icing is complete and the airplane is clean

C. Operator's Ground Deicing/Anti-Icing Training Program . Inspectors should ensure that the operator has approved training procedures in place that have met the training and/or testing requirements of the applicable regulations. These procedures should ensure that all personnel involved in airplane ground-deicing/anti-icing are knowledgeable of their duties and responsibilities.

1) Inspectors must ensure that the operator has a recordkeeping system in place to verify that all personnel have been properly trained in the operator's procedures. Records should include the following:

- Types of training (including initial and recurrent)

EBOOK VOLUME 12. SURVEILLANCE

- Dates of training received
- 2) Training for pre-takeoff check, pre-takeoff contamination check, and/or OTAC.

D. Aerodrome Deicing/Anti-Icing Plan and Secondary Deicing/Anti-Icing Areas.

- 1) If an aerodrome deicing/anti-icing plan has been developed, then the Inspectors should have a general knowledge of this plan and any secondary deicing/ anti-icing areas.
- 2) Inspectors should be familiar with an aerodrome's Deicing/Anti-Icing Control Center. Many aerodromes have developed command centers that control the movement of aircraft, the allocation of slot times, the location of remote deicing/anti-icing, and runway snow removal. The Inspector should become familiar with the planned procedures prior to the deicing/anti-icing season.

E. Equipment. Inspectors should have a general level of knowledge of the deicing/anti-icing equipment.

F. Fluids. Inspectors should be familiar with the types of fluids used for deicing/anti-icing.

1) Type I Applications:

- Performance characteristics
- Mix ratio
- Temperature

2) Types II and IV Applications:

- Performance characteristics
- Mix ratio
- Temperature
- Airplane rotation speed

EBOOK VOLUME 12. SURVEILLANCE

3) *Storage Requirements.*

12.2.3.9. SPECIFIC GROUND DEICING/ANTI-ICING INSPECTION PRACTICES AND PROCEDURES.

A. Operator Procedures. Surveillance of the operator's procedures should clearly show the GACAR part that is being used to meet the ground-deicing/anti-icing rule. Recall that an operator may have several options under GACAR Part 121, 125, or 135, as applicable, to meet the requirements of the rule. These options are discussed in Volume 4, Chapter 15.

1) Crew member training must meet the requirements of the rule and the approval process discussed in Volume 4, Chapter 15, Section 2.

2) Crew member training should include at least the following information:

- The use of hold over times and tables when using deicing/anti-icing fluids (These hold over times are only advisory in GACAR Part 135 operations and will only guide the pilot as to what contamination to expect when conducting the pre-takeoff contamination check)
- Aircraft deicing/anti-icing procedures; inspection and check procedures, to include responsibilities and requirements for the pre-takeoff contamination check, the OTAC, or the alternative procedures as applicable
- Communications with all personnel or agencies involved in the deicing/anti-icing process and the decision making process
- Aircraft surface contamination, to include adherence of frost, ice, or snow and critical area location and identification; knowledge of how small amounts of surface contamination adversely affects airplane performance and flight characteristics
- Types and characteristics of deicing/anti-icing fluids, if fluids are used by the operator

3) It is important that flight crews do not use deicing/anti-icing fluids unless they have been trained in characteristics and effects of these fluids on their operation.

- Cold weather preflight inspection procedures

EBOOK VOLUME 12. SURVEILLANCE

- Techniques for recognizing contamination on the airplane (This aspect of training should cover both preflight inspection and pre-takeoff contamination check)
- 4) All training should be aircraft specific. When an operator has different kinds of aircraft, the training should cover any unique characteristics of these aircraft while operating in ground icing conditions.

12.2.3.11. TASK OUTCOME.

A. Complete the GAR.

B. Completion of this task can result in the following:

- Satisfactory inspection
- Communicate concerns/findings to the Office Manager
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

12.2.3.13. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, other job tasks, and/or additional coordination is required between the Inspector and the Office Manager.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 2. COMMON PART 121, 125, 133, 135 AND 145 INSPECTIONS

Section 4. Detect Unapproved Parts Inspection for Part 121, 125, 133, 135 and 145

12.2.4.1. GACA ACTIVITY REPORT (GAR).

- A. 3622 (AW) (Part 121, 125, 133 and 135)
- B. 3668 (AW) (Part 145)
- C. 3775 (AW) (SUP Investigation)

12.2.4.3. PURPOSE. This section provides guidance for aviation safety inspectors (Inspectors) (Airworthiness) conducting unapproved parts surveillance/inspections at General Authority of Civil Aviation Regulation (GACAR) operators and repair station facilities. This guidance will assist Inspectors in performing a comprehensive inspection, which includes parts accepted into their system, and parts approved for return to service by the operator or repair station.

12.2.4.5. DISCUSSION. To ensure compliance with GACARs, Inspectors will conduct surveillance to detect unapproved parts. Generally speaking, a part is considered to be unapproved if it has been produced, maintained, rebuilt, or altered contrary to GACARs; or if it has been intentionally misrepresented (e.g., false, fraudulent, and/or counterfeit). Specific definitions related to the Suspected Unapproved Parts (SUPs) are summarized below.

A. “Approved Part.” Describes a part that has been designed, produced, maintained, rebuilt, and/or altered in accordance with (IAW) GACARs.

B. Suspected Unapproved Part (SUP). A part that is suspected of not meeting the requirements of an “approved part” for any reason.

C. Unapproved Part. A part that does not meet the requirements of an “approved part.”

12.2.4.7. ACTION. Inspectors charged with certificate management responsibilities for operators and air agencies should ensure that those operators have procedures to prevent unapproved parts from entering into their parts inventories and/or prevent them from being released from their system.

EBOOK VOLUME 12. SURVEILLANCE

A. Inventories. Inspectors should evaluate their air carrier or repair station's parts receiving inspection procedures to ensure that only "approved parts" and materials are accepted into inventories. A representative sample of the inventory should be examined to validate parts for the following, as applicable:

- 1) New parts (accepted into the system) were produced under GACAR Part 21, or are otherwise approved by the General Authority of Civil Aviation (GACA).

NOTE: Volume 6, Chapter 2, Section 5 provides further details on new and used parts acceptable for use on Saudi Arabian-registered aircraft and the required airworthiness certification documents that must accompany them.

2) Documentation identifies the approved manufacturer of that part/material, and states that the part/material complies with the applicable regulations and contains the required information. Documentation *may* include Federal Aviation Administration (FAA) Form 8130-3, Airworthiness Approval Tag; European Aviation Safety Agency (EASA) Form 1, Authorized Release Certificate; Transport Canada Authorized Release Certificate; Joint Aviation Authority (JAA) Form 1; shipping tickets, packing slips, purchase orders, material certifications, and/or certificates of conformity.

3) Parts Manufacturer Approval (PMA) parts are marked.

4) Parts produced under a Technical Standard Order Authorization (TSOA) are marked per the applicable TSO.

5) Standard parts (i.e., bolts and nuts) and raw materials (i.e., sheet metal and welding rods) contain certification statements or other evidence that they conform to established industry or government specifications.

6) Used parts have an approval for return to service by a GACA-certificated person (i.e., operator, repair station, mechanic).

7) Parts with a specified replacement time, inspection interval, or related procedures are permanently marked with part number and serial number (or equivalent) per GACAR § 45.11, 45.13 and 45.15 or dispositioned IAW GACAR § 43.13, Disposition of Life-Limited Parts.

EBOOK VOLUME 12. SURVEILLANCE

B. Maintenance Records/Work Orders. Inspectors should review a representative sample of maintenance records and/or work orders of parts approved for return to service by the operator or repair station to ensure the following:

- 1) “Approved parts” were used during the course of maintenance, repair, or alteration.
- 2) The operator or repair station is authorized to approve the part for return to service.
- 3) The maintenance or alteration was performed IAW the methods, techniques, and practices prescribed in the current manufacturer’s maintenance manual; instructions for continued airworthiness (ICAW) prepared by the manufacturer; or other methods techniques and practices acceptable to the GACA, and/or
- 4) The maintenance was performed IAW operations specifications (OpSpecs) or an inspection program accepted/approved by the GACA.
- 5) Alterations and repairs were performed IAW approved data.

C. Air Agencies. Inspectors should inspect the repair station’s maintenance records and/or work orders to verify the following:

- 1) The maintenance or alteration performed is authorized on a current capability list acceptable to the GACA or on the approved OpSpecs.
- 2) The approved/acceptable data used to perform maintenance or alteration was current at the time the part was approved for return to service.
- 3) The equipment, tools, and materials used are recommended by the manufacturer, or at least equivalent to those recommended by the manufacturer, and are acceptable to the GACA for the part maintained, rebuilt, or altered and approved for return to service.
- 4) Maintenance, preventive maintenance, and/or alteration performed for an operator is performed IAW the operator’s maintenance program and applicable sections of its procedures manual, or the operator’s approved inspection program.
- 5) The methods, techniques, and practices prescribed in the current manufacturer’s maintenance manual, or ICAs prepared by its manufacturer, or other methods techniques and practices acceptable or approved by the GACA are followed.

EBOOK VOLUME 12. SURVEILLANCE

6) Personnel/training records to ensure the facility has personnel with the appropriate training and qualifications, as applicable, to plan, supervise, perform, and approve for return to service the maintenance, preventive maintenance, or alterations performed.

7) When a maintenance function is contracted out, ensure the requirements of the operators accepted/approved maintenance procedures have been met.

NOTE: A part that was approved for return to service without meeting the requirements listed above is considered to be an unapproved part.

D. Operators. Inspectors should inspect the operator's maintenance records and/or work orders to verify the following:

1) The maintenance or alteration performed is authorized by the OpSpecs or an inspection program accepted/approved by the GACA.

2) The approved/acceptable data used to perform maintenance or alteration was current at the time the part was approved for return to service.

3) The equipment, tools, and materials used are recommended by the manufacturer, or at least equivalent to those recommended by the manufacturer and acceptable to the GACA, for the part maintained, rebuilt, or altered and approved for return to service.

4) Maintenance, preventive maintenance, and/or alteration performed by an operator is performed IAW the operator's program and applicable sections of its maintenance manual, or the operator's accepted/approved inspection program.

5) Personnel/training records to ensure the facility has personnel with the appropriate training and qualifications, as applicable, to plan, supervise, perform, and approve for return to service the maintenance, preventive maintenance or alterations performed.

6) When a maintenance function is contracted out, verify that the air operator's accepted/approved maintenance procedures were followed.

NOTE: A part that was approved for return to service without meeting the requirements listed above is considered to be an unapproved part.

EBOOK VOLUME 12. SURVEILLANCE

12.2.4.9. REPORTING FINDINGS OF UNAPPROVED PARTS AND/OR SUP. Inspectors shall report findings of SUP and unapproved parts to the Director, Airworthiness Division. Reports should be made by completing the Suspected Unapproved Parts Notification and a completed GAR record which identifies the necessary information. If the findings are determined to be appropriate after review by GACA management a determination will be made as to what additional actions are necessary.

12.2.4.11. TASK OUTCOME.

A. Complete the GAR.

B. Completion of this task can result in the following:

- Satisfactory inspection
- Communicate concerns/findings to the Office Manager
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

12.2.4.13. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, other job tasks, and/or additional coordination is required between the Inspector and the Office Manager.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 2. COMMON PART 121, 125, 133, 135 AND 145 INSPECTIONS

Section 5. Detailed Process/Task Inspection for Part 121 and 125

12.2.5.1. GACA ACTIVITY REPORT (GAR).

A. 3651 (AW)

12.2.5.3. OBJECTIVE. This section provides guidance for conducting a detailed process/task inspection by analyzing the data, materials and parts used in the maintenance/alterations processes by operators and certificated repair stations authorized to perform maintenance, preventive maintenance, or alterations for a GACAR Part 121 or 125 operator.

12.2.5.5. GENERAL. A detailed process/task inspection is a surveillance activity that will examine one or more specific tasks that are associated with the overhaul, maintenance/alterations of a part or product. This inspection will evaluate the data, tooling, equipment, and processes used to complete one or more tasks.

12.2.5.7. INSPECTOR RESPONSIBILITIES.

A. Preparation. Prior to performing an inspection, it is important that aviation safety inspectors (Inspectors) and air agencies are well prepared. Inspectors should be familiar, when applicable, with the following:

- Operations specifications (OpSpecs) (including the ratings, the specifications listed for limited specialized services, and the process specifications)
- Maintenance documentation (including the required work cards, the inspection forms, and the sign-off sheets)
- Applicable maintenance manuals (including the inspection procedures manuals, the air carrier manuals, the overhaul manuals, the current revisions and dates, and the process specifications)
- Engineering Orders (EO)

EBOOK VOLUME 12. SURVEILLANCE

- Required Inspection Items (RII)

B. Coordination. A detailed process inspection will involve varying degrees of complexity. At times there may be a need for coordination with other Inspectors and/or supervisors in the Airworthiness Division.

12.2.5.9. COORDINATION REQUIREMENTS. This task must be coordinated between the Inspector (Airworthiness) and the operator.

12.2.5.11. REFERENCES, FORMS, AND JOB AIDS.

A. References.

- OpSpecs
- Process specifications, if applicable
- Applicable maintenance manuals

B. Forms.

- GACA Activity Report (GAR)

C. Job Aids. None.

12.2.5.13. PROCEDURES.

A. Prepare for the Inspection. Accomplish the following:

- Identify the process/task to be inspected
- Identify those documents, which will verify the use of approved or accepted data, materials, tools, etc.
- Inform the appropriate personnel as to what particular process/task will be observed during the inspection
- Verify the inspection criteria to be used

EBOOK VOLUME 12. SURVEILLANCE

- During this inspection, pay particular attention to any deviations from approved data or procedures. (Do not let them continue.)

B. Perform the Inspection. The following steps are to serve as a guide on performing a process/task inspection. Certain steps may not be appropriate, depending on the complexity of the repair station or operator. Inspect/review the following, as applicable:

1) *Work instructions.* To verify that:

- Work instructions have been prepared for all processes
- Work instructions reflect the technical data contained in appropriate maintenance manuals or other approved documents
- Work instructions define accept/reject criteria, required tools, test equipment, inspection equipment, details of method of inspection to be performed, and tolerance limits, as applicable
- Work instructions denote and detail the function to be performed, sequence of operations, and inspection points to verify proper handling of products from one station to another through all phases
- Revisions to work instructions have been approved, controlled, and documented
- Traceability is maintained for the completion of all operations

2) *Inspection instructions.* To verify that:

- Inspection records, indicating the number of inspections made, conformance or nonconformance, and the action when the product is nonconforming, are maintained
- When required, re-inspections/retests are performed following additional maintenance
- Assemblies are inspected for conformity before closure
- All required inspections and tests have been satisfactorily accomplished prior to final acceptance of the completed products/parts

EBOOK VOLUME 12. SURVEILLANCE

- Personnel performing RII inspections for an air carrier are identified and authorized by the carrier
- Inspection personnel are not exceeding their area of authority

3) *Data.* To verify that:

- Personnel are provided with current technical data and changes
- Inapplicable, inappropriate, illegible, or obsolete data is removed from areas of potential use
- Non-destructive inspection (NDI) processes are reviewed for conformance with GACA-approved data
- Process specification changes are submitted to the GACA for evaluation and approval
- Tags, forms, and other documents used are controlled

4) *Major Repairs and Alterations.* To verify that:

- If the task involved a major repair or major alteration, that GACA-approved data was used to accomplish the task. Volume 6, Chapter 1 provides further information on GACA-approved data for repairs and alterations

5) *Materials/Parts.* To verify that:

- The materials, test records, and standards used in NDI are identified and controlled
- When required, special identification and controls for materials or parts are identified and are in place prior to the materials/parts being used
- When required, special handling and storage requirements for materials and parts are identified and being used
- There is traceability of material or parts received from distributors and that the records

EBOOK VOLUME 12. SURVEILLANCE

of receiving inspection data are retained and list the name, part number, quantity, and inspection results

6) *Tools and Test Equipment.* To verify that:

- When required, special tools and test equipment are identified and used for an operation or process
- Calibration records are maintained for all tools and test equipment requiring calibration
- The facility's personnel are trained appropriately for their assignments

12.2.5.15. TASK OUTCOMES.

A. Complete GAR.

B. Completion of this task can result in the following:

- Satisfactory inspection
- Communicate concerns/findings to the Office Manager
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

12.2.5.17. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, other job tasks, and/or additional coordination is required between the Inspector and the Office Manager.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 2. COMMON PART 121, 125, 133, 135 AND 145 INSPECTIONS

Section 6. Refueling Procedures Inspection for Part 121, 125, and 135

12.2.6.1. GACA ACTIVITY REPORT (GAR).

A. 3638 (AW)

12.2.6.3. OBJECTIVE. This section provides guidance for monitoring an operator's refueling procedures and facilities.

12.2.6.5. GENERAL. The General Authority of Civil Aviation Regulations (GACARs) do not establish standards for fueling facilities, but this does not relieve the operator of overall responsibility for conducting those operations within established industry standards.

A. Inspector Primary Responsibility. The primary responsibility of the aviation safety inspector (Inspector) (Airworthiness) is to ensure that the operator's facility for the storage and dispensing of aviation fuels is operated in accordance with the operator's manual. Additionally, the operator's manual must be in accordance with current industry standards.

12.2.6.7. COORDINATION REQUIREMENTS. This task requires coordination with the operator and it may require coordination with Aerodrome Safety Inspectors.

12.2.6.9. REFERENCES, FORMS, AND JOB AIDS.

A. References:

- GACAR Part 121, 125, 135 and 139
- Federal Aviation administration (FAA) Advisory Circular (AC) 150/5230-4 (as amended), Aircraft Fuel Storage, Handling, and Dispensing on Aerodromes.

B. Forms. GACA Activity Report (GAR).

C. Job Aids. None.

EBOOK VOLUME 12. SURVEILLANCE

12.2.6.11. PROCEDURES

A. Inspect the Facility.

1) Ensure the following:

- Personnel training requirements are documented and current
- Training is conducted according to the manual curriculum
- Piping is marked and color coded to identify fuel type and grade
- Control/cutoff valves are clearly marked with instructions for emergency use, e.g., on/off

2) Ensure that the fuel farm/storage area provides for the following:

- Proper security (fenced and posted)
- Proper display of “Flammable” and “No Smoking” signs
- Proper markings that identifies the type/grade of fuel

3) Ensure that the equipment includes the following:

- A positive low point sump
- Adequate fire extinguishers

4) Ensure that fuel filters/filter separators contain at least the following:

- An inlet strainer
- Inflow and outflow filter/separators sized to match maximum pump flow capacity;
- A differential pressure check system
- A positive water defense system

EBOOK VOLUME 12. SURVEILLANCE

- A sump drain with outlet located to facilitate capture of outflow
- Fuel sampling (millipore or equivalent) fittings downstream of all filters and filter/separators

5) Ensure that hoses, nozzles and outflow connectors are:

- Specifically designed and tested for delivery of aviation fuels
- Controlled by spring-loaded, non-bypassable automatic (deadman) fuel flow cutoff valves
- Equipped with a dust cap or other feature that will minimize contaminant introduction into the fuel/system;
- Equipped with non-bypassable 100 mesh nozzle/connector screens
- Color coded to identify fuel type

6) Ensure that electrical equipment, switches, and wiring are of a type or design approved for use in hazardous locations (explosion proof, e.g., free of exposed conductors, contacts, switches, connectors, motors).

7) Verify that grounding and bonding equipment ensure that piping; filters, tanks, and electrical components are electrically bonded together and interconnected to an adequate electrical ground. The system should have ground wires, bonding wires, and clamps adequate to facilitate prompt, definite electrical ground connection between fueler/pit /cabinet, grounding system, and aircraft being fueled.

8) Ensure that fuel tenders and fueling pits have the following:

- Appropriate markings displayed, e.g., “DANGER,” “FLAMMABLE,” “NO SMOKING,” fuel grade, standard hazardous material placard, filter due dates, and emergency fuel shutoff
- Appropriately placed fire extinguishers
- An air filter/spark arrestor and a leak-free exhaust system terminating in a standard

EBOOK VOLUME 12. SURVEILLANCE

baffled original equipment type muffler, if equipped with internal combustion engine

B. Observe Aircraft Fueling Operation. Ensure compliance with operator's procedures and determine if procedures are adequate.

C. Analyze Findings. Evaluate any deficiencies to determine what corrections will be required. If any deficiencies are noted, discuss possible corrective actions with the operator.

12.2.6.13. TASK OUTCOMES.

A. Complete GAR.

B. Completion of this task can result in the following:

- Satisfactory inspection
- Communicate concerns/findings to the Office Manager
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

12.2.6.15. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, other job tasks, and/or additional coordination is required between the Inspector and the Office Manager.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 2. COMMON PART 121, 125, 133, 135 AND 145 INSPECTIONS

Section 7. Evaluate/Inspect Outsource Maintenance Organization Facility for Part 121 and 125

12.2.7.1. GACA ACTIVITY REPORT (GAR).

- A. 3338 (AW)
- B. 3624 (AW)
- C. 3640 (AW)

12.2.7.3. OBJECTIVE. This section provides guidance for evaluating and inspecting General Authority of Civil Aviation Regulations (GACAR) Part 121 and 125 operators outsource maintenance organizations' facilities and guidance for compliance with the operator's manual procedure system and with regulatory requirements of associated GACARs.

12.2.7.5. GENERAL. The General Authority of Civil Aviation (GACA) aviation safety inspector (Inspector) (Airworthiness) will evaluate the outsource maintenance provider (OMP), facility, (certificated or non-certificated and other operator) to ensure that it has adequate housing, equipment, spare parts, technical data, and qualified personnel available to satisfactorily complete all contracted maintenance. All such maintenance should be completed in accordance with (IAW) GACAR Part 121, 125 and the operator program and applicable sections of its maintenance manual (MM).

NOTE: The purpose of this guidance is to evaluate and provide oversight of an operator's outsourcing maintenance program. This guidance is not intended to evaluate a certificated repair station, non-certificated repair facility or a certificated air carrier.

- A. The term "non-certificated repair facilities" is not a regulatory term although it is commonly used to describe a person, other than a repair station, that a GACAR Part 121 operator uses to perform maintenance under the authority of GACAR § 121.663. These sections state in part that an operator may arrange with another person to perform maintenance, preventive maintenance, or alterations. All of the employees at a facility may be certificated mechanics with airframe, powerplant or avionics ratings, and may have been trained by the operator. However, all may be

EBOOK VOLUME 12. SURVEILLANCE

contract employees whose services may be utilized:

- Prior to certificating a new operator
- When an existing operator introduces a new make and model aircraft to an operation

B. Many outsource maintenance organization/facility inspections are conducted outside of the Kingdom of Saudi Arabia (KSA).

C. Operator Responsibilities. An operator must comply with all applicable regulations and standards prescribed by the GACA including its duty to provide service with the highest possible degree of safety in the public interest. Compliance with the regulations means compliance with the full intent of the regulations as articulated in regulatory preambles and affiliated documents. To meet its statutory obligations, an operator is responsible for designing its operating systems so that known hazards and risk factors in the environment are controlled and managed. Safety management, quality assurance, and quality control are responsibilities of the operator.

1) Holders of certificates issued under GACAR Part 121 may make arrangements with other individuals or organizations to perform maintenance on the operators' airplanes in accordance with GACAR § 121.659. However, this does not relieve the operator of the primary responsibilities specified in GACAR § 121.659.

2) While properly managed outsourcing of maintenance can be a safe, effective, and efficient means of accomplishing required maintenance actions, the operator retains the responsibility for the airworthiness of its airplanes. The operator must ensure that it, and those with whom it makes arrangements to perform maintenance activities, have adequate organizations (GACAR § 121.675), competent personnel and adequate facilities (GACAR § 121.687), and that all maintenance is performed IAW the operator's manual (GACAR § 121.679).

NOTE: The operator's airworthiness responsibility does not stop at the original OMP; it continues with the subcontractors of the original OMP. The operator must address these second- and third-level OMP issues and how the operator's Continuous Airworthiness Maintenance Program (CAMP) requirements are accomplished at all levels of OMP.

3) GACAR Part 121 operators should establish, in a specific section or chapter of its

EBOOK VOLUME 12. SURVEILLANCE

manual, the policies and procedures to administer, control, direct, and distribute the required information to the maintenance providers and also ensure the proper performance of the work conducted by maintenance providers. These policies and procedures must enable an outsource maintenance provider to operate as an extension of the operator's maintenance organization. One way this is accomplished is for the operator to have documented policies and procedures in their manual to review, evaluate, and accept or reject all maintenance providers' maintenance programs and or standard operating procedures. The method or procedures used for this evaluation process and the distribution methods of this process (including all other information dissemination required for the proper performance of the operator's maintenance by the maintenance provider) should be in the outsource maintenance section or chapter within the operator's manual.

- 4) The GACAR Part 121 operator's Continuing Analysis and Surveillance Systems (CASS) is one of the primary controls of the operator's outsourced maintenance and shall validate the performance and effectiveness of providers of outsourced maintenance activities.

12.2.7.7. INITIATION AND PLANNING.

A. Analyses. Analyses that support decision making should use data that is a representative of the operator's outsource maintenance program/system and processes. This requires that enough valid data be collected to ensure that conclusions represent systemic, rather than isolated, issues. Sampling does not always mean that a large number of observations must be taken. Even many individual observations may fail to provide a clear picture of the operator's operations if they do not represent the full range of its locations, shifts, and work activities.

- 1) Before designing a surveillance plan, the Inspector must verify that Operations Specification (OpSpec) D91, and the list of authorized vendors in the operator's manual required in accordance with GACAR § 121.683, are complete and accurate.
- 2) The completed surveillance plan will provide a representative sample of repair stations that perform substantial maintenance and other facilities, both certificated and non-certificated, where maintenance may be performed. Inspectors must determine the number and locations of observations to allow them to make informed judgments about the overall performance of the operator's program.

B. Targeting Activity. Action plans will be developed using focused surveillance and

EBOOK VOLUME 12. SURVEILLANCE

certificate management activities that directly address the issues found. Inspectors track the operator's corrective actions on areas of identified risk and, where necessary, elevate concerns to appropriate levels of GACA management. The one primary objective of targeting plans should be to focus surveillance activities on OpSpec D91 outsource maintenance provider/facilities.

- 1) Selection of facilities to visit should include those facilities that provide the highest volume of maintenance activity for the operator, perform the most critical maintenance, or show other indications of risk (e.g., past performance problems, safety deficiencies, problems recorded by other Inspectors).
- 2) Evaluate the operator's operating environment, including type and complexity of aircraft fleets, maintenance arrangements, such as amount, type, and sources of maintenance outsourcing, management structure, and financial status.
- 3) Evaluate resources; such as available maintenance audit personnel and capabilities of the operator's CASS with respect to outsourced maintenance oversight.
- 4) Any issues or concerns related to the operator's ability to manage its network of maintenance contractors should be documented and recorded.

C. Pre-Inspection Responsibilities. Before inspecting an outsource maintenance organization/facility, the Inspector should:

- 1) *Review the repair station Organizational Structure and Mission Statement.* This will provide the Inspector with information that will be useful before and during the inspection.
- 2) *Arranging a Visit.* Schedule a meeting with the operator's management to discuss the arrangements made with this outsourcing maintenance provider and the plans and provisions that will be in place during this visit/inspection.
- 3) *Check Agreements.* Ensure the agreements stated in the contract are in accordance with the procedures in the operator or program manager/operators manual. Contract agreements change routinely.
- 4) *Contract Review.* Review the contract between the operator and the outsource provider before the inspection.

EBOOK VOLUME 12. SURVEILLANCE

5) *Obtain a List of Management Personnel.* Before the inspection, the Inspector should request a listing and telephone numbers of management personnel at the outsource facility. If the facility is a certificated repair station, the Inspector may obtain a listing of management personnel from the facility manager.

12.2.7.9. PERFORMING THE TASK.

A. Certificate management oversight responsibility for any GACAR Part 121 operator is to validate the performance of the operator's outsourced maintenance management and contractor oversight through field surveillance at the operator's facilities and in the facilities of selected contractors. Inspectors will select and visit a representative sample of locations where outsourced maintenance is conducted to evaluate the performance of the operator's management and oversight of those maintenance activities.

B. The Inspector must determine whether the outsource maintenance provider has an adequate organization, equipment, and facilities. All maintenance personnel should be appropriately certificated (when necessary), trained by the operator or program manager/operator and authorized to perform the work. The Inspector must keep in mind that the outsourcing provider's maintenance facility is an extension of the operator's overall maintenance organization; therefore, maintenance performed by the provider must be IAW the operator's approved maintenance program (see GACAR §§ 145.83 or 121.659).

C. Before visiting the outsourcing facility, the Inspector should review previous GARs and any other information available.

12.2.7.11. COORDINATION REQUIREMENTS. If the outsource maintenance provider holds a GACAR Part 145 repair station certificate, or air operating certificate (AOC), the Inspector should make every effort to coordinate with the Inspectors having oversight responsibilities for those certificates.

12.2.7.13. REFERENCES, FORMS, AND JOB AIDS.

A. References:

- GACAR Part 43, 91, 119, 121,125 and 145
 - Federal Aviation Administration (FAA) Advisory Circular (AC) 12016 (as amended)
-

EBOOK VOLUME 12. SURVEILLANCE

Air Carrier Maintenance Program.

- Operator's maintenance manual
- Operator's outsource maintenance program

B. Forms. GACA Activity Report (GAR).

C. Job Aid. None.

12.2.7.15. PART 121 PROCEDURES. Additional policy and guidance relative to the oversight of operators outsource maintenance programs/systems can be found in Volume 4, Chapter 3, Continuous Airworthiness Programs for GACAR Parts 121 and 125, which provides guidance for the operator to ensure all maintenance performed by it or other persons, is performed in accordance with the operator's Continuous Airworthiness Maintenance Program (CAMP) and Continuing Analysis and Surveillance (CASS) Programs.

A. The operator's CASS is normally the system that provides the process measurement and controls for the operators outsource maintenance program.

NOTE: The operator's airworthiness responsibility does not stop at the original OMP; it continues with the subcontractors of the original OMP. The operator must address these second- and third-level OMP issues and how the operator's CAMP requirements are accomplished at all levels of OMP.

- 1) It is sufficiently comprehensive in scope and detail to fulfill its responsibility to maintain the aircraft in an airworthy condition in accordance with the applicable regulations and standards prescribed and approved by the GACA.
- 2) Written Contract, Verbal Contract, Work Order, Repair Order, Service Request, should be considered part of an operator's program covering other maintenance, preventive maintenance or alterations required by GACAR § 121.679 that ensures the work is performed IAW their manual.
- 3) Maintaining a current of list of persons with whom the operator has arranged for the performance of any of its required inspections, other maintenance, preventive maintenance, or alterations, including a general description of that work (see GACAR § 121.683).

EBOOK VOLUME 12. SURVEILLANCE

- 4) Determining that each person with whom it arranges for the performance any of its maintenance or required inspections has an organization adequate to perform the work (see GACAR § 121.675).
- 5) Ensuring the operator's inspection program and their program covering other maintenance preventive maintenance or alterations is followed by outsource maintenance providers in performing maintenance, preventive maintenance, and alterations of that operator's airplanes, including airframes, aircraft engines, propellers, appliances, emergency equipment, and parts thereof (see GACAR §§ 121.679 and 121.683).
- 6) Ensuring that an outsource maintenance provider has competent personnel, adequate equipment, and facilities for the proper performance of the work that the operator has arranged for them to perform (see GACAR § 121.679).
- 7) Ensuring that no person is used to perform a required inspection item (RII) unless he or she holds the appropriate certificate, is properly trained, qualified, and authorized by the operator to perform that work (see GACAR § 121.687).
- 8) Ensure all maintenance items designated Required Inspection Items (RII) have been inspected by a person authorized by the operator and that that person determined that the work was performed satisfactorily before the aircraft was returned to service (see GACAR §§ 121.683 and 121.1545).
- 9) Ensuring the methods of performing the required inspections were followed when the operator made arrangements with another person to perform a required inspection (see GACAR §§ 121.679 and 121.683).
- 10) Ensuring the operator's procedures were followed for the re-inspection of work performed pursuant to previous required inspection findings, when the operator made arrangements with another person to perform a required inspection (see GACAR §§ 121.679 and 121.683).
- 11) Ensuring the operator's procedures, standards, and limits necessary for the acceptance or rejection of items required inspected are followed and met when the operator made arrangements with another person to perform a required inspection (see GACAR §§ 121.679 and 121.683).

EBOOK VOLUME 12. SURVEILLANCE

- 12) Each person uses the tools, equipment, and test apparatus necessary to assure completion of the work in accordance with accepted industry practices and if special equipment or test apparatus is recommended by the aircraft manufacturer involved, they use that equipment or apparatus or its equivalent acceptable to the Part 121 operator and the GACA (see GACAR §§ 43.19, 91.443, 121.679, 121.683).
- 13) Ensuring the operator's periodic inspection and calibration of precision tools measuring devices and test equipment procedures, standards, and limits for the performance of the work that it has made arrangements with an outsource maintenance provider to perform, are met (see GACAR §§ 121.679 and 121.683).
- 14) Ensuring the duty time limitations of GACAR § 121.1033 are met for persons used by the operator to perform maintenance (any outsource maintenance provider).
- 15) Determining that the training requirements of GACAR § 121.695 are met by the operator's or the outsource maintenance provider's training program.
- 16) Ensuring the operator's procedures for preparing an airworthiness release or appropriate entry in the aircraft log are followed after maintenance, preventive maintenance or alterations have been performed on an aircraft by an outsource maintenance provider (see GACAR § 121.1545).
- 17) Ensuring the operator has all the records from maintenance providers required for the issuance of an airworthiness release has been met before the aircraft is released to service (see GACAR § 121.699).
- 18) Performing receiving inspections on products that outsource maintenance providers have performed work on. These inspections should include a review of a teardown or buildup report to ensure airworthiness directive compliance and the procedures and standards for the operator's inspections, checks, service, repair, and/or preventive maintenance, checks, or tests prescribed in its manual were met. Also, that the component parts, accessories, or appliances are maintained in an airworthy condition IAW the time limits for the accomplishment of the overhaul, replacement, periodic inspection, and routine checks of the aircraft and its component parts, accessories, and appliances (see GACAR § 121.679).
- 19) When an operator makes arrangements with a person to perform work that does not have

EBOOK VOLUME 12. SURVEILLANCE

the authority under GACAR § 43.9 to approve an aircraft, airframe, aircraft engine, propeller, appliance, or component part for return to service for the work they performed, the operator must approve it for return to service under the authority of GACAR § 121.663 or have it approved for return to service by a person authorized by GACAR § 43.9 as applicable. In either case, the operator must have a control in place to ensure the work was performed IAW the requirements of its CAMP and maintenance manual. The operator's manual must include the instructions and information necessary for personnel to determine the adequacy of the work performed for the approval for return to service of an aircraft, airframe, aircraft engine, propeller, appliance, or component part that has undergone this type of maintenance (see GACAR §§ 91.447, 121.143, 121.679 and 121.663).

20) When an operator requests authorization to have an organization perform substantial maintenance for them, they must request an amendment to their OpSpecs (OpSpec D91).

12.2.7.17. PART 125 PROCEDURES. If the contractor is a certificated repair station the Inspector should determine the maintenance provider's qualifications. Ensure that the outsource maintenance facility is properly certificated and rated for the work being performed. If the repair station is authorized to work at a place other than the fixed location(s), the Inspector should review the repair stations operations specifications (OpSpecs). OpSpec D100 will list the work that is authorized to be accomplished away from the fixed base and, in the case of a repair station, the manual location in which the procedures are listed.

12.2.7.19. INSPECTION PROCEDURES/TASKS.

A. Inspect the Outsource Provider's Organization. Ensure that the outsource provider's organization is adequate to support the operator's maintenance program.

B. Inspect the Technical Library. Ensure that the maintenance facility's library is available for use by the facility personnel and includes the following:

- Repair station manual (RSM) (if applicable)
- Quality Control Manual (QCM) (if applicable)
- Safety Management System (SMS) manuals
- If applicable, portions of the operator's maintenance manual (MM)

EBOOK VOLUME 12. SURVEILLANCE

- If required, applicable parts of the operator's approved aircraft inspection program
- If applicable portions of pertinent maintenance instructions from its manual system
- Applicable instructions for continued airworthiness (ICA)
- Manufacturer's aircraft, engine, propeller, appliance, and emergency equipment component repair manual(s) (CRM) or work scopes as required
- If applicable, operator provided aircraft, engine, propeller, appliance, and emergency equipment, CRMs or work scopes
- Airworthiness Directives (AD). Engineering orders, etc.

C. Review the Work Process. If there is an aircraft, engine, or propeller in the facility undergoing maintenance, review the entire outsourcing process at work. The operator's work package usually comes to the planning department first. Review the inspection package provided by the operator. The first page is normally titled the work scope, it will list all of the AD, non-routine maintenance, and scheduled phase or check work cards, and it will list any components scheduled for removal and replacement during this heavy maintenance visit.

NOTE: It is recommended that Inspectors verify that the operator's maintenance manual is complete.

- 1) Be aware that every operator's system is different, the information herein is provided as a tool, and it is not to be used verbatim. The Inspector must always use the operator's manual procedures as the guide.
- 2) By sampling the records, the Inspector will ensure the work is accomplished and documented IAW the operator's maintenance manual.
- 3) Ensure that Required Inspections Items (RII) notations that are accomplished are IAW the operator's manuals.
- 4) Ensure the airworthiness release is accomplished IAW GACAR §125.541 and is signed off IAW the operator's manual.

D. Review Personnel Training Records. Review the maintenance provider's records to ensure

EBOOK VOLUME 12. SURVEILLANCE

that personnel are trained to perform the work for which they have been contracted. Inspect the quality control/quality assurance (QC/QA) system. Ensure that the facility personnel have been trained to the operator's program and procedures.

NOTE: Asterisk (*) items may come under the purview of the GACAR Part 145 repair station Inspector. It is most important that the Inspector coordinate all findings with the Inspector responsible for the repair station

E. Responsibility. Responsibilities for maintenance and inspection functions are separate.

F. Personnel. Staffing reflects the complexity of the operation.

G. Personnel Qualifications. Personnel are appropriately certificated (if required), qualified, and trained to perform inspections.

H. Required Inspection Items (RII) Personnel. Personnel performing RII functions are properly trained and authorized by the operator.

I. Authorized Personnel. Lists of authorized inspectors and RII personnel are maintained, including the type of equipment and limitations authorized.

J. Records. All inspection personnel training records are maintained and kept current.

K. Accountability. The operator's system for controlling accountability and documentation of all the work accomplished.

- 1) The operator and the Outsource Maintenance Provider's (OMP) comply with the suspected unapproved parts (SUP) program.
- 2) Incoming parts and supplies to the repair station are properly inspected, tagged and distributed IAW the quality manual procedures.
- 3) Verify the operator has properly trained and authorized the OMP's receiving and incoming parts and equipment personal.
- 4) Contract maintenance provider receiving inspection personnel.
- 5) Verify the operator has properly trained the receiving inspection personnel (A/C

EBOOK VOLUME 12. SURVEILLANCE

maintenance representatives) IAW the operator manual.

L. Inspect the Outsource Maintenance Provider's (OMP's) Maintenance Department . Ensure the following; (This applies to all types of facilities):

- 1) Verify that the OMP's personnel are properly trained for the complexity of the work performed.
- 2) The facilities are adequate for the type of work performed. Space, lighting, and ventilation reflect the requirements of the work being performed. (This does not apply to certificated repair station with line rating only.)
- 3) Special tools and test equipment is available to support the work being performed:

NOTE: Inspector's inspecting the operator's calibrated tool program must concentrate on the operator's program and not the repair station's calibration program, unless the operator has adopted the repair station program. The Inspector must ensure there is traceable documentation. In all cases all calibration programs must be accomplished IAW procedures or protocols established by an internationally recognized Institute of Standards and Technology (IST).

- 4) All work is to be accomplished IAW the pertinent parts of the operators CAMP, instructions for continued airworthiness, and any other pertinent maintenance instructions.
- 5) The shift turnover procedures must be accomplished IAW the operator's manual and not the repair stations procedures (see GACAR § 121.683). Procedures to ensure that required inspections, other maintenance, preventive maintenance, and alterations that are not completed as a result of shift changes or similar work interruptions are properly completed before the aircraft is returned to service.
- 6) Flammable and hazardous materials are properly segregated and stored.
- 7) Serviceable and unserviceable parts are identified and segregated.
- 8) Shelf-life limits are controlled.
- 9) Review a copy of the audit form if the operator's internal audit system incorporates an "in-process audit."

EBOOK VOLUME 12. SURVEILLANCE

- 10) Maintenance personnel duty time limitations are IAW GACAR §§ 121.741 and 121.1033.
- 11) The outsource maintenance provider's parts scrapping procedures must be IAW the operator's procedures.
- 12) Discuss the Service Difficulty Report (SDR)/malfunction, or defects program requirement (see GACAR §§ 121.1553 and 145.103) has changed the reporting requirements.
- 13) Duty Time Limitations must be IAW the operator's manual procedures.

M. Analyze Findings. Upon completion of the inspection, record all deficiencies and determine the appropriate corrective action(s).

N. Debrief the Outsource Facility's Management Team . Before leaving the facility, discuss the discrepancies and leave a courtesy copy of the inspection with the facility/contractor's management. Clarify that this is a preliminary listing.

O. Determine Whether Any of the Findings Pertain to an Apparent Noncompliance Issue. The Inspector and the maintenance provider's management should discuss the conditions and nature of the alleged discrepancy to ensure that all parties are aware of the condition.

P. Complete Applicable GACA Forms. When the Inspector returns to his workplace, the Inspector must complete the applicable GACA forms.

12.2.7.21. TASK OUTCOMES.

A. Complete the GAR.

B. Completion of this task can result in the following:

- Satisfactory inspection
- Communicate concerns/findings to the Office Manager
- Follow-up inspection for a particular discrepancy

EBOOK VOLUME 12. SURVEILLANCE

- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

12.2.7.23. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, other job tasks, and/or additional coordination is required between the Inspector and the Office Manager.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 3. COMMON PART 121 AND 135 INSPECTIONS

Section 1. Cargo Loading Inspection for Part 121 and 135

12.3.1.1. GACA ACTIVITY REPORT (GAR).

A. 1638 (OP)

B. 3623 (AW)

12.3.1.3. OBJECTIVE. This section provides guidance for conducting inspections on General Authority of Civil Aviation Regulation (GACAR) Part 121 and 135 passenger, cargo, and combi aircraft that transport cargo, passenger baggage, company materials (COMAT), and dangerous goods in the upper deck, lower deck, forward and/or aft cargo compartments, or pods.

12.3.1.5. GENERAL.

A. General Authority of Civil Aviation (GACA) Inspection Personnel.

- 1) Aviation safety inspectors (Inspectors) should become familiar with the type of aircraft to be inspected before performing their surveillance. This may be accomplished through on-the-job training (OJT) or formal aircraft systems training.
- 2) Due to operators' varying schedules, Inspectors may need to perform their surveillance outside of normal office hours or when time permits.
- 3) Inspectors will review the operator's cargo procedures.

B. Coordination.

- 1) An Inspector who needs additional information or guidance on a topic will coordinate with other who are experienced in that specialty.
- 2) Inspectors may need to coordinate with their applicable Supervisor to gain access to the operator's cargo procedures.

EBOOK VOLUME 12. SURVEILLANCE

12.3.1.7. INITIATION AND PLANNING.

A. Initiation. This task is scheduled as part of the work program. Additional inspections may be initiated as by any special requirements or circumstances.

B. Planning. Inspectors should review: Airworthiness Directives (ADs), Service Difficulty Report (SDR) summaries, maintenance/airworthiness bulletins, GAR entries, incidents, etc. when available, to become familiar with current service difficulty information.

- 1) Review related General Authority of Civil Aviation Regulations (GACARs) and GACA policy/guidance.
- 2) Review operator's cargo and baggage loading procedures.
- 3) Review operator's mass and balance procedures.
- 4) Review operator's procedures for unusual loads such as oversized cargo, sports teams and their equipment, or military contract loads (either cargo or troop transport).
- 5) Review operator's procedures for loading last-minute items in cargo, baggage, pod compartments, and so forth. This may include items such as carry-on bags, last-minute bags or cargo, mail, or dangerous goods.
- 6) Review operator's operations specifications (OpSpecs).

12.3.1.9. MAINTENANCE RECORDS.

A. By regulation, maintenance, when performed, must be recorded in the aircraft records prior to an approval for return to service. The operator's manual should describe the procedures for ensuring that recording requirements are met for cargo-related equipment. Additionally, the manual should include the specific instructions on when an airworthiness release or appropriate maintenance log entry is required.

NOTE: The records should include unit load devices (ULD), net, or cargo handling system component repairs conducted in-house or by outside agencies, and record retention and receiving inspections of those items.

B. Every mechanical discrepancy in the maintenance log must be either corrected or deferred

EBOOK VOLUME 12. SURVEILLANCE

using the methods identified in the operator's maintenance procedures manual.

12.3.1.11. DEFERRED MAINTENANCE.

A. Minimum Equipment List (MEL) - Deferred Maintenance. The operator's approved MEL allows the operator to continue a flight or series of flights with certain inoperative equipment. The continued operation must meet the requirements of the operator's approved MEL program for deferral of inoperative equipment. During the ramp inspection, an Inspector may encounter items included in an operator's Minimum Equipment List (MEL), such as administrative control items, that do not appear in the MMEL but have been approved by the GACA for individual operator use. If this is the case, the Inspector should contact the applicable Principal Inspector for clarification.

B. Other Deferred Maintenance.

- 1) Operators frequently use a system to monitor items that have been inspected previously and found to be within serviceable limits, per the maintenance manual. These items are still airworthy, yet warrant repair at a later time or when the items no longer meet serviceable limits. This method of deferral may require repetitive inspections to ensure continuing airworthiness of the items. Examples of items that are commonly deferred in this manner are fuel leaks, surface dents, and temporary (airworthy) repairs.
- 2) Passenger convenience item (not safety/airworthiness related) deferrals should be handled in accordance with the operator's NEF program.

C. Repairing Inoperative Items. The maintenance program approved for an operator must provide for prompt and orderly repairs of inoperative items.

12.3.1.13. INSPECTION GUIDELINES. Ensure the following:

A. Load Manifest. Ensure that the load manifest form is prepared and signed by employees of the operator or other qualified and authorized persons assigned to supervise the loading of aircraft and prepare the load manifest form.

B. Upper Deck Inspection (Cargo/Combi Aircraft).

- 1) Inspect the main cargo door, door seal, locking mechanism, and door lock viewing

EBOOK VOLUME 12. SURVEILLANCE

windows (if installed) for damage, deterioration, distortion, and security.

2) Inspect the cargo compartment, paying particular attention to the condition and security of the ceiling, sidewall linings, and floor panels. Holes in liners that are repaired by tape may indicate hidden damage.

3) Inspect main floor locks, rollers, side rails, and cargo loading components for security, damage, and general condition. Ensure conformance with the operator's approved program.

NOTE: Be aware of possible substitution of load-bearing components of the cargo handling system. If any substitution of load-bearing components is found, contact the operator for clarification.

4) Inspect the main cargo doorsill protector for installation and security.

5) Inspect the main cargo compartment area for foreign object damage and general cleanliness.

6) Inspect the overall condition of the smoke barrier curtain, if installed, or cockpit door seal, barrier net assembly, or solid bulkhead. Ensure that the net (if used) is properly rated for its intended G loading. Pay particular attention to the following:

a) The smoke barrier curtain must be free of tears, holes, and cuts to prevent smoke from entering the forward cabin and flight deck.

b) The door seal, for condition and integrity.

c) The barrier net, for condition and security (i.e., check for frayed straps, hardware integrity, and proper markings).

d) Cargo compartment retention nets, for condition and security.

e) The solid bulkhead, for condition and security.

f) The required placards, such as loading, fire suppression, and so forth.

C. Lower, Forward and/or Aft Compartment (Passenger and Cargo Aircraft), and Pods.

EBOOK VOLUME 12. SURVEILLANCE

- 1) Inspect the compartment or pod to determine its condition, security, deterioration, and cleanliness.
- 2) Ensure that the required placards are installed.
- 3) Ensure that baggage is loaded in accordance with the operator's mass and balance program and/or other operator procedures.
- 4) Check the condition and security of tiedown devices/restraints.
- 5) Check the security of ballast, if installed.
- 6) If the aircraft is equipped with cargo pods, inspect area like any other cargo compartment.
- 7) Inspect cargo for proper tagging and/or identification (e.g., mail, crew bags, equipment, and parts that the operator considers COMAT). Inspect floor locks/cargo loading system, if installed. Inspect door seals and mechanisms.
- 8) Inspect the interior, paying particular attention to the condition and security of the ceiling/sidewall linings and floor panels, including the proper installation of repair tape.
- 9) Inspect cargo doors, door seals, locking mechanisms, and door lock viewing windows (if installed) for cleanliness, damage, deterioration, and security. Ensure that the fire detection/suppression is appropriate for its classification and that required placards are present.
- 10) Ensure that cargo is properly secured by appropriate tie-downs having enough strength to eliminate the possibility of shifting under all normal flight conditions.
- 11) Inspect retention nets for condition and security.
- 12) Ensure that loading/unloading is conducted in a safe manner in accordance with the operator's procedures.

D. Unit Load Devices (ULD).

- 1) Ensure that ULDs are eligible for installation on the aircraft.

EBOOK VOLUME 12. SURVEILLANCE

NOTE: Eligibility is determined by the original equipment manufacturer (OEM) Weight and Balance Manual or supplemental type certificate (STC) Weight and Balance Supplement.

- 2) Ensure TSO markings are attached to cargo containers, nets, and pallets (if applicable).
- 3) Inspect ULD (nets, pallets, and containers) for serviceability per the operator's procedures and limitations.
- 4) Ensure that identification markings are present in accordance with operator procedures.

E. Weighing Scales.

- 1) Inspect current calibration of scales traceable to the US National Institute of Standards and Technology, or equivalent standards.
- 2) Inspect overall condition of scales.
- 3) Ensure conformance with the operator's program.
- 4) Observe weighing procedures and system integration to the load manifest.

F. Aircraft Loading and Ground Equipment.

- 1) Ensure that the aircraft is loaded/unloaded in accordance with the operator's manual.
- 2) Ensure that ground equipment is positioned in accordance with the operator's manual.
- 3) Ensure that load sheets or the manifest is properly executed and signed for.
- 4) Ensure that dangerous goods information is relayed to the crew.
- 5) Observe general safety procedures being used during cargo off-loading operations, especially at night, for use of lighting, reflective clothing, flashlights, and wands.

G. Supernumeraries.

- 1) Inspect the supernumerary area (if equipped) for condition and security.

EBOOK VOLUME 12. SURVEILLANCE

- 2) Ensure that emergency equipment is properly installed and each item has an inspection tag affix.
- 3) Ensure that escape devices, such as slides, ropes, or descent devices, are serviceable per the operator's manual.
- 4) Ensure proper placarding of the supernumerary area for emergency exit.
- 5) Ensure that supernumerary to flightdeck communications is serviceable.
- 6) Inspect the galley area (if installed) for condition and security.

H. Dangerous Goods. The surveillance of the transportation of dangerous goods (TDG) by air includes the following elements:

NOTE: Corrosion and structural damage may occur by improper handling of some dangerous goods.

- 1) Inquire about proper training for loaders, load supervisors, and personnel involved in ULD build up in dangerous goods recognition.
- 2) Inquire about proper training in dangerous goods recognition for maintenance personnel involved with movement of COMAT.
- 3) Ensure proper loading and marking of dangerous goods. The Inspector should contact their supervisor after noting discrepancies in the handling of dangerous goods.
- 4) Inquire about safety procedures and equipment availability in case of a dangerous goods incident/accident, such as a spill (e.g., mercury spill kit, emergency equipment).

12.3.1.15. INSPECTION RESULTS.

A. This inspection must be accomplished without interfering with the ground time limitations unless safety of flight becomes an issue. The following items, which are common discrepancies, may cause scheduling delays if found during a ramp inspection.

- Improper load manifest

EBOOK VOLUME 12. SURVEILLANCE

- ULDs are not airworthy
- Damage to aircraft loading system
- Damage to the aircraft
- Improper positioning of ground equipment
- Inadequate training
- Any other unusual operator activity

B. The Inspector must bring all noted discrepancies to the attention of appropriate personnel immediately, to allow the operator the opportunity to take corrective action without interrupting the flight schedule. The Inspector must verify that all corrective maintenance actions taken regarding maintenance discrepancies were in accordance with the requirements of the operator's maintenance procedures manual.

12.3.1.17. PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites.

- Knowledge of the regulatory requirements of GACAR Part 109, 121 and 135, as applicable
- Experience working with similar type aircraft

B. Coordination. This task may require coordination between Airworthiness and Operations Inspectors.

12.3.1.19. REFERENCES, FORMS, AND JOB AIDS.

A. References.

- GACAR Part 21, 91, 109, 121, and 135 (as applicable)
- FAA Advisory Circular (AC) 25-17 (as amended), Transport Airplane Cabin Interiors Crashworthiness Handbook.

EBOOK VOLUME 12. SURVEILLANCE

- FAA Advisory Circular (AC) 25-18 (as amended), Transport Category Airplanes Modified for Cargo Service.
- FAA Advisory Circular (AC) 120-27 (as amended), Aircraft Weight and Balance Control.
- Operator's Cargo Procedures Manual(s)

B. Forms. GAR

C. Job Aids. None

12.3.1.21. PROCEDURES.

A. Initiate Ramp Inspection in Accordance with the S&ER Surveillance Plan.

B. Prepare for the Inspection.

- 1) Review the operator's flight schedule, select the flight to be inspected, and note the type of operation (cargo or PAX). Make certain the selected flight has adequate ground time so that the inspection can be accomplished without schedule delays.
- 2) Determine if any recent problem areas have been identified for that type of aircraft.
- 3) Determine if recent regulatory changes and AD requirements affect the aircraft to be inspected.

C. Conduct Exterior Inspection, as Applicable. Perform this inspection in accordance with Volume 12, Chapter 2, Section 1, Figure 12.2.1.3, Exterior Inspection Guidelines.

D. Interview Flight Crew and/or Loading Supervisor, as Appropriate. Introduce yourself to the flight crew and/or loading supervisor, as appropriate, and describe the purpose and scope of the inspection.

E. Inspect Aircraft Maintenance Records.

- 1) Ensure that all open discrepancies from the previous flight are addressed per the operator's manual, prior to departure of the aircraft.

EBOOK VOLUME 12. SURVEILLANCE

- 2) Review the maintenance records to determine if repetitive maintenance problems exist, which might indicate a trend.
- 3) Ensure that all MEL items are deferred in accordance with the provisions of the operator's approved MEL.
 - a) Review the operator's approved MEL to determine whether conditions, procedures, and placarding requirements were accomplished to correctly defer specific items.
 - b) Note the date when an item was first deferred to determine if the maximum allowed length of deferral was exceeded. Accomplish this by examining maintenance record pages, the deferred maintenance list, or deferred maintenance placards or stickers.
- 4) Ensure that an airworthiness release, maintenance record entry, or appropriate approval for return to service has been made after the completion of maintenance.
- 5) Ensure that the maintenance record contains the following for each discrepancy, as specified in the operator's manual:
 - Description of the work performed or a reference to acceptable data
 - Name or other positive identification of the person approving the work
 - Name of the person performing work, if outside the organization

F. Perform Interior Inspection, as Applicable. Perform this inspection in accordance with Volume 12, Chapter 2, Section 1, Figure 12.2.1.2, Interior Inspection Guidelines.

G. Debrief Operator. Inform the appropriate personnel that the inspection has been completed. Discuss the discrepancies found during the inspection with the operator.

H. Examine Maintenance Record Entries. Ensure that the operator has recorded all maintenance discrepancies noted during this inspection. If time is available, monitor the operator's corrective actions.

I. Analyze Findings. Analyze each finding to determine if the maintenance-related discrepancies are the result of improper maintenance and/or missing or inadequate maintenance/inspection

EBOOK VOLUME 12. SURVEILLANCE

procedures.

12.3.1.23. TASK OUTCOMES.

A. Complete GAR Record

B. Completion of this task can result in the following:

- Satisfactory inspection
- Communicate concerns/findings to the Office Manager
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

12.3.1.25. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, other job tasks, and/or additional coordination is required between the Inspector and the Office Manager.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 3. COMMON PART 121 AND 135 INSPECTIONS

Section 2. Trip Records Inspection for Part 121 and 135

12.3.2.1. GACA ACTIVITY REPORT (GAR).

A. GAR 1638 (OP)

B. GAR 8628 (CS)

12.3.2.3. GENERAL. The primary objective of trip records inspections is for aviation safety inspectors (Inspectors) to ensure that operators meet the regulatory requirements of the General Authority of Civil Aviation Regulations (GACARs) as applicable, for the proper use, documentation, and retention of operational trip records. Inspectors can evaluate trip records to reconstruct a particular flight or a series of flights by examining flight plans, releases, loading and mass documents, weather documents, and other related flight information retained by the operator. Trip record surveillance includes an evaluation of the quality of the recorded data, a check of the calculations for accuracy, and a check of the operator's compliance with GACARs and company procedures. This section contains requirements for operator trip records and also guidance to be used by Inspectors when evaluating and conducting an inspection of an operator's trip records.

12.3.2.5. PART 121 OPERATOR TRIP RECORDS REQUIREMENTS. Inspectors should ensure that, in the subject areas that follow, GACAR Part 121 operators meet the following requirements:

A. Load Manifests, Dispatch/Flight Releases and Flight Plans. GACAR Part 121 operators are required by GACAR § 121.1565 to retain for at least three months the originals, copies, or electronic versions of the completed load manifest (or information from it, except information concerning cargo and passenger distribution); the dispatch/flight release; and the flight plan. Inspectors should review these records as follows:

1. *Load Manifest.* Inspectors should ensure that the operator's load manifest contains the following information:

- Individual mass of the aircraft, fuel and oil, cargo and baggage, passengers, and crew members

EBOOK VOLUME 12. SURVEILLANCE

- Maximum allowable takeoff mass: runway to be used, runway-limit, and climb limit, en route performance limits, destination landing mass limits, and destination or alternate landing distance limits
- Total aircraft takeoff mass (as computed under approved procedures)
- Documentation that the aircraft is properly loaded with the center of gravity within approved limits
- Passenger names (unless such information is maintained elsewhere by the operator)

2. Dispatch/Flight Release. Per GACAR § 121.1509, Inspectors should ensure that the operator's dispatch/flight release contains the following information:

- The name(s) of all crew members
- The ATC flight plan required by GACAR § 91.73
- The OFP contents required by GACAR § 121.1513
- The minimum fuel supply required by GACAR § 121.1381 for the start of each takeoff
- The latest available weather reports and forecasts for the destination and alternate aerodromes
- Additional weather reports or forecasts that the PIC or aircraft dispatcher considers necessary or desirable
- The name of the dispatcher with operational control of the flight or the name of the person preparing the flight release
- The signature(s)/acceptable certification required by GACAR § 121.1313 or 121.1329, as applicable
- A statement for the PIC to certify all the requirements of GACAR § 91.43(b) have been met

3. Air Traffic Control (ATC) Flight Plan. Inspectors must ensure that the operator's ATC

EBOOK VOLUME 12. SURVEILLANCE

flight plan contains at least the information required by GACAR § 91.73.

4. Operational Flight Plan (OFP). Inspectors must ensure that the operator's OFP contains at least the information required by GACAR § 121.1513.

12.3.2.7. PART 135 OPERATOR TRIP RECORDS REQUIREMENTS. GACAR Part 135

operators are required by GACAR § 135.690 to prepare a load manifest in duplicate for each flight conducted. Copies of these load manifests must be retained by the operator for at least 30 days at the operator's principal base of operations or at another location approved by the President. A load manifest must contain the following information:

- Total number of passengers
- Total mass of the loaded aircraft
- Maximum allowable takeoff mass for that flight
- Center of gravity limits
- Center of gravity of the loaded aircraft or an entry on the manifest that the aircraft center of gravity is within limits according to an approved loading schedule or method
- Aircraft registration marks or flight number
- Origin and destination of the flight
- All crew member names and position assignments

12.3.2.9. TRIP RECORDS INSPECTION AREAS. During a trip records inspection, the Inspector should not consider any one inspection area to be more important than any other inspection area. Five general inspection areas have been identified as areas to be evaluated during trip records inspections. These areas are: general; flight plan; dispatch release; load manifest; and, other required documents (see Figure 12.3.2.1, Trip Records Inspection Job Aid).

12.3.2.11. GENERAL INSPECTION PRACTICES AND PROCEDURES. Trip records inspections are usually conducted at the operator's principal base of operations. Some operators have established a system where line stations forward all trip record information to one central location where the information is retained for the required time period. Some operators have most of

EBOOK VOLUME 12. SURVEILLANCE

their trip record information stored in a computerized format. Inspectors should use the following general, procedural guidelines when conducting an inspection of an operator's trip records.

A. Preplanning Inspection. Before conducting the actual inspection, Inspectors should familiarize themselves with the operator's trip records procedures, formats, and means of disseminating information to flight crews. Inspectors should preplan the inspection by deciding which specific areas should be concentrated upon, such as listing alternate aerodromes, accurate fuel loads, dispatch release time versus actual block-out time, and accurate and timely weather information.

B. Initial Contact With Operator. Inspectors should contact the operator's personnel responsible for maintaining trip record files and advise them that an inspection shall be conducted. Upon arriving at the recordkeeping location, the Inspector should properly identify one's self and request records for a specific series of trips. This ensures that the operator has an effective means of storing record information and is capable of retrieving specific trip information at the President's request. Inspectors should also request space at the operator's facility to conduct the inspection.

NOTE: If an operator uses electronic records, it is important that the Inspector become familiar with the system before conducting the surveillance.

C. Examination of Documents. During the conduct of the actual inspection, Inspectors should examine all of the available documents for each flight and cross-check the information between the trip records. For example, the fuel load on a dispatch release for a GACAR Part 121 operator should be the same as the fuel load on the load manifest, the flight plan, and the fuel slip within the operator's specified tolerance.

12.3.2.13. SPECIFIC INSPECTION PRACTICES AND PROCEDURES. When conducting trip records inspections, Inspectors should use the Trip Records Inspection Job Aid (see Figure 12.3.2.1). This job aid contains all of the required trip record information for each type of operation. Items annotated with an asterisk (*) on the job aid provide additional guidance to the Inspector for the evaluation of specific trip records items, such as the information that must be contained in an airworthiness release. For all trip records inspections, the Inspector should, as a minimum, evaluate the operator's records for the following:

A. Accuracy and Completeness. Inspectors should ensure that each trip record package they examine contains all of the required information according to the Trip Records Inspection Job

EBOOK VOLUME 12. SURVEILLANCE

Aid (Figure 12.3.2.1) and also pertaining to the actual flight it represents. Each document should have a flight number or a trip number and an aircraft identification number (e.g. registration marks or nose number) which clearly identifies the applicable flight.

B. Aircraft Mass and Balance Information. Each trip records package, regardless of the type of operator, must contain aircraft mass, balance (CG), and loading information. Passenger and cargo mass information must be accurately reflected on the load manifest. When evaluating this information, Inspectors should take into account the following:

- 1) Many operators have approved systems which result in mass and balance “finals” being transmitted to the flight crew via air-ground passive communication systems (ACARS) or company radio frequencies after the aircraft has departed the gate or ramp area. This information, which normally consists of adjusted takeoff gross mass and trim settings, is critical to the crew members for the accurate determination of the takeoff data. Inspectors should ensure that the information contained on the load manifest accurately portrays the actual passenger and cargo mass.
- 2) Load manifests must contain, as a minimum, two mass and balance notations:
 - The maximum allowable takeoff mass
 - The actual takeoff mass for the particular flight

NOTE: Inspectors should ensure that these two mass figures are clearly annotated on the load manifest document.

C. Minimum Fuel Required. Inspectors should examine GACAR Part 121 operator trip records to ensure that they include an annotation of the minimum fuel required to conduct the flight. Although not specifically required by regulation, many operators will provide a breakdown of fuel loads, such as trip fuel, alternate fuel, reserve fuel, and holding fuel. When examining fuel figures, Inspectors should cross-check the dispatch release fuel quantity (or mass in kilograms) with the load manifest fuel quantity (or mass in kilograms) to ensure that the figures are the same. Additionally, Inspectors must ensure that the operator’s flight plan includes the amount of fuel on board (in hours), and that this figure matches, within the operator’s allowable tolerance, the fuel figures shown on the dispatch release and the load manifest.

NOTE: Inspectors may obtain a close estimate of hourly fuel burn information from the

EBOOK VOLUME 12. SURVEILLANCE

cruise control charts in the applicable aircraft operating manual.

D. Dispatch/Flight Release Information. GACAR § 121.1309 requires a *scheduled* operator to issue a new dispatch release if the flight is delayed for more than 1 hour from the intermediate aerodrome. GACAR § 121.1325 requires that *unscheduled* operators be issued a new flight release, if the flight is delayed on the ground for more than 6 hours. To ensure that the operator is re-releasing flights as required, Inspectors should determine the actual departure times from company logs, ATC tower logs, or some other means, and then compare those times with the original release times (as applicable). This requirement is often observed during operations in adverse weather conditions.

12.3.2.15. TASK OUTCOME.

A. Complete GAR.

B. Completion of this task can result in the following:

- Satisfactory inspection
- Communicate concerns/findings to the Office Manager
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

12.3.2.17. FUTURE ACTIVITIES.

Based on inspection findings, determine if increased surveillance, additional enforcement, other job tasks, and/or additional coordination is required between the Inspector and the Office Manager.

EBOOK VOLUME 12. SURVEILLANCE

Figure 12.3.2.1. Trip Records Inspection Job Aid

GAR Activity Code: 1628		Date:	Operator Name:
Records Location:		Records Manager:	Phone Number:
S = Satisfactory; U = Unsatisfactory; P = Potential; I = Information; E = Exceeds			
General	Type of Op. (IFR or VFR)	Max Allowance T/O Mass * Runway-Limited * Climb Limited *En Route Climb/Cruise Requirements * Destination Landing Limits	
Retention	Trip Number	Actual T/O Mass	
Procedures	Departure aerodrome	CG Within Limits	
Content/Info	Intermediate Stop	Trim Setting	
Currency	Destination aerodrome	Passenger List of Names (Unless retained elsewhere)	
Availability	Alternate aerodrome (if required)	Other Part 121 Unscheduled Documents	
Legibility	Min Fuel Required: *Trip * Reserve * Taxi * Alt * Hold * Contingency * No Alt Avail * Tanker	Airworthiness Release * Work Performed/Inspection Items * Authorized Signatures	
Other/Remarks	Weather Reports & NOTAMS *Destination *Intermediate Stops *Alternates	Pilot Route Certification	
Flightplans (ATC & OFP)	Flight Release: 121 Unscheduled	Part 135 Load Manifest	
A/C Identification #	Company Name	Total Number of Passengers	
A/C Type	A/C Make, Model, Reg. #	Total TOM	
Name of PIC * May be listed on dispatch/ release	Flight/Trip #	Max TOM for That Flight	
Point of Departure	Date of Flight	Aircraft CG Limits	
Time of Departure	Crewmember Names *PIC * All Others	CG For That Flight	
Proposed Routing	Departure/Destination aerodrome	A/C Registration # or Flight #	
Cruise Altitude/FL	Alternate aerodrome	Flight Origin	
TAS At Altitude	Route of Flight	Flight Destination	
Point of 1 st Landing & Estimated Elapsed Time Until Over That point	Min Fuel Required: *Trip * Reserve * Taxi * Alt * Hold * Contingency * No Alt Avail * Tanker	Crewmember Names & Duty Position	
Fuel On Board (Hrs)	Type of Op. (IFR or VFR)	Additional Notes:	
Dispatch Release: 121 Scheduled	Load Manifest: All 121 Ops		
Aircraft ID. #	Individual Mass * A/C * Fuel & Oil * Cargo/Baggage (w/location) * Passenger		

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 3. COMMON PART 121 AND 135 INSPECTIONS

Section 3. Manuals Inspection for Part 121 and 135

12.3.3.1. GACA ACTIVITY REPORT (GAR).

A. GAR 1621 (OP)

B. GAR 8621 (CS)

12.3.3.3. GENERAL. The General Authority of Civil Aviation Regulations (GACARs) require operators to prepare and keep current various manuals and checklists for the direction and guidance of flight and ground personnel conducting air transportation operations. Each operator is required to maintain a complete operations and maintenance manual (or set of manuals) at its principal base of operations and to furnish complete manuals (or set of manuals) to the GACA upon request. An operator's manuals must be reviewed by principal inspectors (PIs) and other qualified aviation safety inspectors (Inspectors) to ensure adequate content and compliance with applicable regulations, safe operating practices, and the operator's operations specifications (OpSpecs). While PIs are encouraged to provide guidance and advice to operators in the preparation of their manuals, the development and production of an acceptable manual is solely the responsibility of the operator. This section contains information about the definitions and regulations concerning different manuals and direction and guidance to be used by PIs when conducting operations manual inspections of GACAR Part 121 and 135 operators.

12.3.3.5. BACKGROUND DEFINITIONS. PIs should have knowledge of the following regulations, definitions, and guidance concerning the various types of manuals and guidance materials.

A. Flight Manual. GACAR § 91.303 require that a General Authority of Civil Aviation (GACA) approved flight manual be carried aboard each aircraft for the guidance of crew members when conducting flight operations. A flight manual is any manual approved by the GACA that an operator uses to comply with this requirement. A flight manual may either be an approved Aircraft Flight Manual (AFM), or an approved Company Flight Manual (CFM). PIs must review an operator's flight manuals to ensure that the manuals contain adequate direction and guidance for those operations the operator conducts and for the environment in which the operations are

EBOOK VOLUME 12. SURVEILLANCE

conducted (see Volume 4, Chapter 12, Section 3).

B. Operations and Maintenance Manuals. GACAR §§ 121.139 and 135.83 require that each operator prepare and keep current a manual providing guidance for all categories of flight and ground personnel conducting air transportation operations. The manuals required by GACAR §§ 121.139 and 135.83 are termed the Operations Manual (OM) and Maintenance Manual (MM). The operator's manual must include the duties and responsibilities of each category of employee. The manuals must also include adequate policy, direction, and guidance for the safe and efficient performance of the duties assigned to each category of employee. In practice, a system of manuals is required to meet both operational and airworthiness regulatory requirements, even for relatively simple operations.

C. Guidance Material. Inspectors should become thoroughly familiar with the contents of Volume 4, Chapter 12, Manuals, Procedures, and Checklists, before conducting a manuals review. Inspectors should direct particular attention to Volume 4, Chapter 12, Section 2, Approval and Acceptance of Manuals and Checklists.

12.3.3.7. PROCEDURES FOR REVIEWING OPERATORS MANUALS. PIs should use the following procedures when reviewing an operator's manuals:

A. Initial Review. A comprehensive review of flight manuals, OM and MM must be conducted by the PI and other assigned Inspectors during the initial certification of an applicant. During the initial review of these manuals, PIs must ensure that the operator has addressed the applicable topics discussed in Volume 4, Chapter 12. In addition, those items in the operator's final compliance statement which require the operator to develop a policy statement, operating system, method, or procedure, must be addressed in these manuals. If user manuals are furnished, those topics which apply to the specific user must be addressed. Each topic must be presented with enough detail to ensure that the user can properly carry out the portion of the policy or procedure for which the user is responsible.

B. Review of Changes to Manuals. The PI or a designated Inspector must review each revision or proposed revision to a manual, checklist, or procedure and use the applicable guidance that follows:

- 1) *Approval of Manual Changes.* Changes to manuals or sections of manuals or checklists which require approval must be approved by the President in writing before the operator can use the change. PIs should endeavor to review approved material in a timely manner.

EBOOK VOLUME 12. SURVEILLANCE

- 2) *Acceptance of Manual Changes.* Only a portion of an operator's manuals are "approved" by the President, while the remaining portions are "accepted" by the President. The operator may begin using accepted portions of a manual once the change is delivered to the GACA. PIs should attempt to review changes to accepted portions of manuals promptly, but may need to delay the review of accepted material due to higher priority work. If the PI subsequently concludes that an accepted section of a manual is not acceptable, the PI shall formally notify the operator of the deficiency. Upon notification, the operator must take action to resolve the deficiency.
- 3) *Other Considerations for Manual Changes.* PIs shall not limit manual reviews to a strict consideration of the change itself but shall also consider the impact of the change on the operator's overall manual system, training program, and type of operations. Changes in Operations Specifications (OpSpecs) should be accompanied by a review of applicable sections of the operator's manual.

C. Manual Reviews During En Route Surveillance. Inspectors conducting en route inspections and ramp inspections should review the flight manual and those portions of the OM carried by the flight crew for completeness and currency. When a flight is long enough to make it practical, Inspectors should review these manuals more in-depth, particularly those sections that are operationally relevant to the flight in progress. An Inspector conducting both cockpit and cabin inspections should check the personal manuals of crew members to ensure that all required revisions have been made.

12.3.3.9. PERIODIC REVIEW OF MANUALS. The continual review of an operator's manuals by Inspectors is necessary because both the aviation environment and the operations conducted by the operator are constantly changing.

A. Each PI is responsible for developing a surveillance plan for the operator's manual system. At least one major portion of the operator's manual system should be reviewed annually, and the entire manual system should be reviewed over a period of one to three years (depending on the complexity of the operation). This periodic review should be coordinated between PIs and other Inspectors to ensure an appropriate exchange of information and to avoid redundant reviews.

12.3.3.11. TASK OUTCOME.

EBOOK VOLUME 12. SURVEILLANCE

A. Complete the GAR.

B. Completion of this task can result in the following:

- Satisfactory inspection
- Communicate concerns/findings to the Office Manager
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

12.3.3.13. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, other job tasks, and/or additional coordination is required between the Inspector and the Office Manager.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 3. COMMON PART 121 AND 135 INSPECTIONS

Section 4. Proficiency and Competency Check Inspection for Parts 121 and 135

12.3.4.1. GACA ACTIVITY REPORT (GAR).

- A. 1541 (OP) (Oral-Administered by Inspector)
- B. 1542 (OP) (FSTD-Administered by Inspector)
- C. 1543 (OP) (Aircraft-Administered by Inspector)
- D. 1641 (OP) (Oral-CP observed by Inspector)
- E. 1642 (OP) (FSTD-CP observed by Inspector)
- F. 1643 (OP) (Aircraft-CP observed by Inspector)

12.3.4.3. GENERAL. General Authority of Civil Aviation Regulations (GACAR) Part 121 and 135 operators may establish a check pilot program for conducting the proficiency and competency checks required by the General Authority of Civil Aviation (GACA). Principal Operations Inspectors (POIs) have the surveillance responsibility for an operator's check pilot program. POIs or their representatives are authorized to observe these checks at any time as a check pilot surveillance job function and if aircraft qualified to administer proficiency and competency checks. This section contains information, direction, and guidance to be used by POIs and other aviation safety inspectors (Inspectors) when observing or conducting a proficiency or competency check inspection.

12.3.4.5. OBJECTIVES OF PROFICIENCY AND COMPETENCY CHECK INSPECTIONS. The surveillance of an operator's proficiency and competency checks provides the GACA with information about the effectiveness of the operator's training and qualification programs. The objectives when conducting a proficiency or competency check inspection are as follows:

- To evaluate individual airmen performing their duties and responsibilities

EBOOK VOLUME 12. SURVEILLANCE

- To evaluate individual check airmen performing their duties and responsibilities
- To assess the effectiveness of the operator's training program
- To identify operational procedures, manuals, or checklists which are deficient
- To assess the effectiveness of the operator's simulators and equipment
- To evaluate the effectiveness of the operator's trend analysis, standardization, and quality control program

12.3.4.7. PROFICIENCY AND COMPETENCY CHECK INSPECTION PROCEDURES AND GUIDANCE. Before conducting a proficiency or competency check inspection, Inspectors must become thoroughly familiar with the operator's manuals. Inspectors may also be required to qualify in the operation of the aircraft or flight simulation training device (FSTD). While conducting proficiency and competency checks, Inspectors and check pilots should also use the direction and guidance in Volume 9, Chapters 1, 2, 3, and 4 that pertain to the conduct of certification checks. In addition, Inspector job aids for various types of checks are found in Figures 12.3.4.1 through 12.3.4.4. Inspectors should use the following guidance when conducting proficiency and competency check inspections:

A. Areas of Familiarization. Inspectors must be familiar with the following areas before conducting proficiency and competency check inspections:

- Inspector, safety pilot, and crew qualification for FST and aircraft
- Acceptable methods for presenting the maneuvers and events of the check in FSTD and aircraft
- Acceptable standards of performance for proficiency and competency checks

B. Inspection Areas. Inspectors should use the following guidance pertaining to specific inspection areas during a proficiency or competency inspection:

1) *Airman Competency.* This inspection area applies to the knowledge, ability, and proficiency of the airman receiving the check. An airman must perform specific events in an aircraft, a FSTD, or a combination thereof, during a proficiency or competency check. Through observation of the check ride, the Inspector can determine if the airman has an

EBOOK VOLUME 12. SURVEILLANCE

acceptable level of aircraft systems knowledge and is competent in the performance of normal, abnormal, and emergency flight procedures. In addition, the Inspector can observe whether the airman complies with company policy, possesses current manuals, and possesses appropriate certificates and ratings.

2) *Check Pilot Competency*. See paragraphs 12.3.4.9 and 12.3.4.11 below for guidance.

3) *Evaluation of the Operator's Training Program*. The analysis of proficiency or competency check inspection results is an excellent means for a PI to ensure the continued effectiveness of an operator's training program. The GAR provides a way for PIs to collect and retrieve inspection results. When deficient areas are identified through these systems, the areas should be rectified by changes in the operator's training program. For example, if inspection comments repeatedly indicate deficiencies in the area of non-precision approaches, the SI should require the operator to emphasize that event in the operator's flight training curriculum segments.

4) *Manuals, Procedures, and Checklists*. Inspectors can use the data from proficiency or competency checks, combined with data from other inspections (such as cockpit, en route, and ramp inspections), to identify deficiencies in manuals, procedures, or checklists previously approved or accepted by the President. Checklist procedures, MEL/CDL procedures, and specific flight maneuvers and procedures are operational areas that may require change to ensure compliance with GACARs or safe operating practices.

5) *Equipment*. This inspection area refers to the condition of the aircraft, simulators, or training devices used during the check. When evaluating the equipment, Inspectors should determine the following:

- Whether the required inspections have been conducted
- Whether the observed discrepancies were recorded on maintenance logs
- Whether the equipment is in an adequate state of repair
- Whether the equipment operates properly

NOTE: Equipment malfunctions that have an effect on the outcome of the check should be recorded in the GAR. The inspection of FSTDs is a separate surveillance activity.

EBOOK VOLUME 12. SURVEILLANCE

6) *Effectiveness of an Operator's Trend Analysis, Standardization, and Quality Control Program.* Operators should collect, record, and analyze the results from proficiency and competency checks to detect and correct deficiencies in training programs, procedures, and checklists. POIs shall encourage operators with more than 10 crew members in any duty position to establish trend analysis. POIs shall evaluate the effectiveness of these programs. Inspectors conducting a series of proficiency and competency checks will, over time, observe changes being made by the operator. Through the analysis, the POI has a direct measure of the effectiveness of these changes and the operator's quality control program.

12.3.4.9. SURVEILLANCE OF CHECK PILOTS. Check pilot inspections should be conducted while the check pilot is conducting an approved checking activity. These inspections enable the POI to evaluate both the individual check pilot performing check pilot duties and the company's entire check pilot program. Inspectors should evaluate the following areas when determining a check pilot's competency:

A. Check Pilot Responsibilities. The check pilot is responsible for: ensuring that all required flight test events are completed in a realistic flight scenario; providing adequate preflight and post-flight briefings for the airman being checked; and objectively evaluating the airman's performance. An evaluation of the check pilot's ability to actually perform the flight events of the proficiency or competency check is not normally part of a check pilot inspection. POIs must place emphasis on the competence of each check pilot as an evaluator.

NOTE: Inspectors may encounter difficulties in conducting the surveillance of check airmen whose activities are restricted to two-place airplanes or helicopters. In such cases, it may not be possible for an Inspector to observe the check pilot conducting actual checks. In lieu of these observations, the Inspector may review the check pilot's activities and arrange for an Inspector to administer the check pilot's competency and line checks.

B. Check Pilot Qualification. A check pilot must maintain basic qualification in the duty position in accordance with GACAR Part 121 or 135, as applicable. Should a question concerning the check pilot's basic qualifications arise, a separate inspection must be conducted to evaluate the airman's basic skills.

12.3.4.11. INSPECTOR RESPONSIBILITIES DURING CHECK PILOT OBSERVATIONS.

When a proficiency check or competency check is conducted by a company check pilot and observed by an Inspector, the Inspector should evaluate both the airman being checked and the competency of

EBOOK VOLUME 12. SURVEILLANCE

the check pilot administering the check. The check pilot is responsible for completing all required checking events, for providing suitable briefings before and after the session, and for fairly and objectively evaluating the airman being checked. After the check is completed, the Inspector is responsible for debriefing the check pilot and the airman being checked (should the check pilot's debriefing be inadequate).

A. The Inspector's primary responsibility is to observe and evaluate the overall conduct of the check. The Inspector must refrain from: asking questions of the airman being checked, attempting to control the type or sequence of checking events, and from interfering in any way with the manner in which the check pilot conducts the check.

B. It is the check pilot's responsibility to conduct a complete and proper check. The Inspector's responsibility is to evaluate the performance of both the airman being checked and the check pilot and to properly record the inspection results. Should the check pilot's performance be unsatisfactory, the Inspector shall inform the POI using the most expeditious means available. Should the check pilot fail to complete all required items on a check (which has been satisfactory to that point), the Inspector shall bring this fact to the attention of the check pilot and ensure that all events are completed.

12.3.4.13. AIRMAN DEFICIENCIES. While certain training benefits are gained during proficiency or competency checks, the purpose of a check is to have the airman's state of proficiency evaluated and to ensure that the last training conducted was sufficient to ensure the airman's proficiency throughout the interim period. If the check pilot conducting the check observes minor deficiencies (and believes that minor instruction may correct the situation) the check pilot may suspend the check temporarily, conduct remedial training, and then resume the check.

A. Repeating Events. GACAR §§ 121.797(e) and 135.355(b) authorize check pilots to give additional training to an airman who fails to satisfactorily complete an event on a check. The additional training must be given prior to repeating the event. Problems have occurred in instances where check pilot have merely repeated events until the airman performed those events within tolerances. This practice is not acceptable and is an abuse of training to proficiency. When a proficiency or competency check is interrupted to conduct training, that check must still be completed within the timeframe the operator originally scheduled for the check. If training is so extensive that the check cannot be completed in the allotted timeframe, the check pilot must consider the check to be unsatisfactory and place the airman in requalification training.

B. Unsatisfactory Performance. Inspectors shall not conduct airman training during

EBOOK VOLUME 12. SURVEILLANCE

proficiency or competency checks. If an event is unsuccessful, the Inspector should complete as much of the remaining flight events as possible or terminate the check. The check must be recorded as unsatisfactory.

12.3.4.15. TASK OUTCOME.

A. Complete the GAR.

B. Completion of this task can result in the following:

- Satisfactory completion of the check pilot observation
- Communicate concerns/findings to the Office Manager
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

12.3.4.17. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, other job tasks, and/or additional coordination is required between the Inspector and the Office Manager.

EBOOK VOLUME 12. SURVEILLANCE

Figure 12.3.4.1 Part 121 Pilot Proficiency Check Job Aid

DATE:	AIRMAN NAME:	CHECK AIRMAN NAME:	HZ #	M/M/S:
DESIGNATOR:	CERTIFICATE #:	GAR Code:	RESULTS: P or F	DUTY POS:
□ - REQUIRED EVENT [W] - WAIVERABLE EVENT # - SPECIFIED CONDITION * - ITEM TO OBSERVE				
AIRMAN BEING CHECKED		□ TAKEOFF (XWIND) # Conditions Permitting * Runway tracking * Heading Control After Rotation	* Procedures	
KNOWLEDGE			□ ADDITIONAL MISSED APPROACH	
ABILITY/PROFICIENCY			# PIC Only	
QUAL/CURRENCY			# May be Engine Out	
CERT/RATINGS				
BRIEFINGS		[W] TAKEOFF (REJ) * Procedures	[W] CIRCLING APP	
MANUAL CURRENCY		* Max Braking/Rev	# If Approved for Operator	
USE OF CHECKLIST		* Brake Energy Procedures	# Landing Runway Must be at Least 90 Degrees From App Course	
□ NORMAL PROC.		* Emergency/Evacuation	# Max 30 Degrees Bank	
□ ABNORMAL PROC.				
□ EMERGENCY PROC.		□ TAKEOFF (V1CUT) # >V1<V2	[W] STEEP TURNS	
□ SYSTEM KNOWLEDGE		* Procedures	# Min 45 Degrees Bank	
□ CREW MANAGEMENT		* Speed Control	# Min 180 Degrees Turn	
PROFICIENCY CHECK		* Heading Control	[W] APP TO STALLS	
EQUIPMENT EXAM		* Clean Up	# T/O, Clean, Landing Configurations (3)	
(Oral or Written)		* Airstart	# Two May be Waived	
PREFLIGHT				
[W] Preflight Inspection (Ext)		[W] AREA DEPARTURE * Procedures	# One Must be Done at Bank Angle of 15 Degrees to 30 Degrees	
□ Prestart Checks		□ NAVAID Tracking	□ LANDING (NORMAL)	
□ Radio Checks		* Speed/Heading Control	* Procedures	
□ Nav/Comm Setup				
□ Starting Procedures		□ HOLDING □ Procedures	□ LANDING - FROM ILS	
* Abnormal Starts		* Wnd Correction	□ LANDING (XWIND)	
□ TAXIING			# Conditions Permitting	
* Procedures		□ ILS (NORMAL) * Procedures	* X-wind Technique	
□ TAKEOFF - Normal		* Loc/GS Tracking	□ LANDING - ENG - OUT	
* Smooth Power Application		* Callouts	# On 3-Eng A/C, 2 Engine's Simulated Failed	
* Centerline Tracking		* Speed Control	# On All Other A/C 50% Failure on One Side	
* Callouts		* Actions at DH		
* Adherence to T/O Speeds				
* Use of Flight Director		□ ILS (ENG-OUT) # Manually Controlled		
□ TAKEOFF (INSTMT)		# Engine Failure Before FAF	□ LANDING (REJ)	
# At or Before 100 Feet HAA		* Procedures	# 50' Over Runway Threshold	
* Heading Control				
CHECK PILOT				
		□ MAP (FROM ILS) # Complete * Procedures	□ BRIEFINGS	
		□ NONPRECISION APPROACH (1 ST)	□ CONDUCT	
		□ NONPRECISION APPROACH (SUBS)	□ COACHING	
			□ EVALUATION	

EBOOK VOLUME 12. SURVEILLANCE

Figure 12.3.4.2 Part 121 F/E Proficiency Check Job Aid

DATE:	AIRMAN NAME:	CHECK AIRMAN NAME:	HZ #:	M/M/S:
DESIGNATOR:	CERTIFICATE #:	GAR Code:	RESULTS: P or F	DUTY POS:
[] - REQUIRED EVENT [W] - WAIVERABLE EVENT # - SPECIFIED CONDITION			* - ITEM TO OBSERVE	
AIRMAN BEING CHECKED				
KNOWLEDGE	* Emergency/Evacuation <input type="checkbox"/> T/O (ENG. FAIL.) * Recognition * Fuel Management/Dump * Elect/Pneumatic Systems Mgmt. * Other Systems * Airstart Procedures * Landing Data * Completion of Checklists * Crew Coordination	* APPROACHES <input type="checkbox"/> APPROACHES (MALF) * Review of SIAP and Approach Monitoring * Fuel Management * Checklist Completion	* APPROACHES <input type="checkbox"/> APPROACHES (MALF) * Engine Out * Electrical Malfunctions * Aircraft Fires * Hydraulic Malfunctions * Flight Control Malfunctions * Flap/Slat Malfunctions * Landing Gear Malfunctions * Nav/Comm Malfunctions * Other System Malfunctions	
ABILITY/PROFICIENCY				
QUAL/CURRENCY				
CERT/RATINGS				
PERS. EQUIPMENT				
MANUAL CURRENCY				
USE OF CHECKLIST				
[] NORMAL PROC.				
[] ABNORMAL PROC.				
[] EMERGENCY PROC.				
[] SYSTEM KNOWLEDGE	* CLIMB <input type="checkbox"/> CLIMB * Power Settings * Fuel Management * Air Conditioning and Pressurization * Maximum/Optimum Altitude for Mass	* CRUISE <input type="checkbox"/> CRUISE * Powerplant Shutdown and Airstart * Electrical Malfunctions * Hydraulic Malfunctions * Pneumatic Malfunctions * Air Conditioning/Press Malfunctions * Nav/Comm Malfunctions * Flight Control Malfunctions * Engine Failure/ Drift Down * Hi Alt. Performance	* LANDING (NORMAL) <input type="checkbox"/> LANDING (NORMAL) * Procedures * Completion of Checklist * Restraints Fastened * Reverser Monitoring	
[] CREW MANAGEMENT				
PROFICIENCY CHECK				
[] EQUIPMENT EXAM (Oral or Written)				
[] PREFLIGHT				
* Logbook Procedures * Safety Checks * Cabin/Interior * Ext. Walk around * MEL/CDL Procedures * O2 Preflight				
[] PERFORMANCE DATA				
* T/O Landing Data * Aerodrome Analysis * Mass & Balance				
[] PREDEPARTURE				
* Procedures * Panel Setup * Starting Procedures * Starting Procedures and Limitations * Comm/ACARS				
[] TAXI/TAKEOFF	* Fuel Management Procedures * Pressurization Procedures * Area Awareness * Checklist Completion	* DESCENT <input type="checkbox"/> DESCENT * Fuel Management Procedures * Pressurization Procedures * Area Awareness * Checklist Completion	* BRIEFINGS <input type="checkbox"/> BRIEFINGS * CONDUCT <input type="checkbox"/> CONDUCT * COACHING <input type="checkbox"/> COACHING	
[] TAKEOFF (REJ)				
* Brake Energy				

EBOOK VOLUME 12. SURVEILLANCE

Figure 12.3.4.3 Part 135 Pilot Competency/Instrument Proficiency Check Job Aid

DATE:	AIRMAN NAME:	CHECK AIRMAN NAME:	HZ #:	M/M/S:
DESIGNATOR:	CERTIFICATE #:	GAR Code:	RESULTS: P or F	DUTY POS:
[] - REQUIRED EVENT [W] - WAIVERABLE EVENT # - SPECIFIED CONDITION * - ITEM TO OBSERVE				
AIRMAN BEING CHECKED				
KNOWLEDGE		<input type="checkbox"/> TAKEOFF (XWIND) # Conditions Permitting		* Procedures
ABILITY/PROFICIENCY				<input type="checkbox"/> ENGINE-OUT MAP MULTIENGINE A/C # Full MAP Procedure
QUAL/CURRENCY				
CERT/RATINGS				
BRIEFINGS				
MANUAL CURRENCY				
USE OF CHECKLIST				
<input type="checkbox"/> NORMAL PROC.				
<input type="checkbox"/> ABNORMAL PROC.				
<input type="checkbox"/> EMERGENCY PROC.				
<input type="checkbox"/> SYSTEM KNOWLEDGE				
<input type="checkbox"/> CREW MANAGEMENT				
COMPETENCY CHECK				
EQUIPMENT EXAM (Oral or Written)				
PREFLIGHT				
[W] Preflight Inspection (Ext)				
<input type="checkbox"/> Prestart Checks				
<input type="checkbox"/> Radio Checks				
<input type="checkbox"/> Nav/Comm Setup				
<input type="checkbox"/> Flight Control Checks				
<input type="checkbox"/> Starting Procedures * Abnormal Starts				
<input type="checkbox"/> TAXIING/SAILING * Procedures				
<input type="checkbox"/> TAKEOFF - Normal * Smooth Power Application * Centerline Tracking * Callouts * Adherence to T/O Speeds * Use of Flight Director				
<input type="checkbox"/> TAKEOFF (INSTMT) # At or Before 100 Feet AGL				
IC - Events that are conducted on IFR Proficiency Check				
IC				
		<input type="checkbox"/> TAKEOFF (XWIND) # Conditions Permitting		
				<input type="checkbox"/> BRIEFINGS
				<input type="checkbox"/> CONDUCT
COACHING				
IC				
		<input type="checkbox"/> NONPRECISION APPROACH (1 ST)		<input type="checkbox"/> EVALUATION
IC				
		<input type="checkbox"/> NONPRECISION APP (2 ND) - PIC		

IC – Events that are conducted on IFR Proficiency Check

EBOOK VOLUME 12. SURVEILLANCE

Figure 12.3.4.4 Part 135 Helicopter Competency/Instrument Proficiency Check Job Aid

EBOOK VOLUME 12. SURVEILLANCE

DATE:	AIRMAN NAME:	CHECK AIRMAN NAME:	HZ #:	M/M/S:		
DESIGNATOR:	CERTIFICATE #:	GAR Code:	RESULTS: P or F	DUTY POS:		
[] - REQUIRED EVENT [W] - WAIVERABLE EVENT		# - SPECIFIED CONDITION		* - ITEM TO OBSERVE		
AIRMAN BEING CHECKED						
KNOWLEDGE	[] TAKEOFF (XWIND) # Conditions Permitting * Runway tracking * Heading Control After Rotation	IC	* Procedures [] ENGINE – OUT MAP MULTIENGINE A/C # Full MAP Procedure			
ABILITY/PROFICIENCY						
QUAL/CURRENCY						
CERT/RATINGS	[W] TAKEOFF (REJ) * Max Braking * Brake Energy Procedures * Emergency/Evacuation	IC	[W] CIRCLING APP # If Approved for Operator # Landing Runway Must be at Least 90 Degrees From App Course # Max 30 Degrees Bank			
BRIEFINGS						
MANUAL CURRENCY						
USE OF CHECKLIST						
[] NORMAL PROC.	[] TAKEOFF (MULTI) # Engine Fail > VMC * Speed Control * Heading Control * Clean Up * Airstart	IC	[W] STEEP TURNS # 45 Degrees Bank Min			
[] ABNORMAL PROC.						
[] EMERGENCY PROC.						
[] SYSTEM KNOWLEDGE						
[] CREW MANAGEMENT						
COMPETENCY CHECK						
EQUIPMENT EXAM (Oral or Written)	IC [W] AREA DEPARTURE * Procedures [] NAVAID Tracking * Speed/Heading Control	IC	[W] LANDING (NORMAL) * Procedures			
PREFLIGHT						
[W] Preflight Inspection (Ext)						
[] Prestart Checks	IC [W] HOLDING [] Procedures * Wind Correction	IC	[] LANDING – FROM ILS [] LANDING (XWIND) # Conditions Permitting * X-Wind Technique			
[] Radio Checks						
[] Nav/Comm Setup						
[] Flight Control Checks	IC [] ILS (NORMAL) * Procedures * Localizer/GS Tracking * Callouts * Speed Control * Actions at DH	IC	[] LANDING – SEA A/C # Glassy Water # Rough Water			
[] Starting Procedures * Abnormal Starts						
[] TAXIING/SAILING * Procedures						
[] TAKEOFF – Normal * Smooth Power Application * Centerline Tracking * Callouts * Adherence to T/O Speeds * Use of Flight Director	IC [] ILS (ENG-OUT) # Manually Flown # Engine Failure Before FAF * Procedures	IC	[] LANDING – ENG OUT MULTIENGINE A/C [] LANDING (REJ) # 50's Over Runway Threshold			
IC [] TAKEOFF (INSTMT) # At or Before 100 Feet AGL						
		IC [] MAP (FROM ILS) # Complete Procedure * Procedures	CHECK PILOT			
			[] BRIEFINGS [] CONDUCT			
		IC [] NONPRECISION APPROACH (1 st)	[] COACHING			
			[] EVALUATION			
		IC [] NONPRECISION APP (2 nd) - PIC				

IC – Events that are conducted on IFR Proficiency Check

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 3. COMMON PART 121 AND 135 INSPECTIONS

Section 5. Line Check Inspection for Parts 121 and 135

12.3.5.1. GACA ACTIVITY REPORT (GAR).

A. 1544 (OP) (Administered by Inspector)

B. 1644 (OP) (CP observed by Inspector)

12.3.5.3. GENERAL. This section contains direction and guidance for aviation safety inspectors (Inspectors) to use while conducting line checks required by General Authority of Civil Aviation Regulations (GACAR) §§ 121.793 and 135.353. The majority of the elements that comprise a line check are identical to those that comprise a cockpit en route inspection.

12.3.5.5. SPECIFIC LINE CHECK INSPECTION PRACTICES AND PROCEDURES. The operator is responsible for administering both initial and recurrent line checks. In some situations, though, a General Authority of Civil Aviation (GACA) aviation safety inspector (Inspector) may administer a line check, especially when an operator is not authorized to have its own check pilot. Inspectors may also need to administer the initial line check when a new type of aircraft is being introduced into either GACAR Part 121 or Part 135 service.

A. Inspector (Operations) Qualifications. Inspectors must hold:

- 1) Either a commercial pilot certificate or airline transport pilot (ATP) certificate with the appropriate aircraft category and class in which the line check is being conducted.
- 2) For recurring checks, the Inspector must hold at least a commercial pilot certificate with the appropriate aircraft category and class.
- 3) In any operation in which the Inspector occupies a pilot seat as a required pilot crew member, the Inspector must be both qualified and current in that specific type of aircraft that the line check is being conducted in.

B. Inspector Preparation. Inspectors should prepare for conducting line checks by completing

EBOOK VOLUME 12. SURVEILLANCE

the following steps:

- 1) *Familiarization.* The Inspector should become familiar with the operator's procedures before conducting the line check. The operator's manuals and operations specifications (OpSpecs) are sources for this information.
- 2) *Timeframe.* The Inspector should plan to arrive in sufficient time to complete the necessary jump seat procedures, meet the flight crew, inspect airman and medical certificates, and observe preflight duties. Inspectors should use the Air Operator Cockpit En Route Inspection Job Aid (Volume 12, Chapter 4, Section 1, Figure 12.4.1.1) while conducting these inspections (see paragraph 12.3.5.7 below). Whenever possible, an Inspector should begin a line check in the operations area.

C. Route and Duration of Line Checks. The Inspector must observe at least one flight segment, including a takeoff and a landing. The flight must be over a typical route served by the operator and must allow the Inspector to observe the PIC perform the duties and responsibilities associated with the conduct of a revenue flight.

NOTE: It may be desirable to have the PIC fly two flight segments or to perform the duties of the pilot-not-flying (PNF) during a second segment while the second in command (SIC) performs the duties of the pilot flying.

D. Debriefing. After completion of the flight, Inspectors should debrief the PIC. The Inspector is required to comment on any procedure believed to be deficient or unsafe. The Inspector must use discretion, however, when debriefing crew members or commenting about procedures that the President has approved for that operator. The Inspector should enter relevant comments into the GAR.

E. Documentation. The Inspector shall record the completed line check on company check ride forms or an Airman Competency/Proficiency Check Form and sign as the check pilot. Inspectors are not required to keep copies of these forms as the GAR serves as the GACA record.

12.3.5.7. USE OF JOB AID. The job aid for Air Operator Cockpit En Route Inspections (Volume 12, Chapter 4, Section 1, Figure 12.4.1.1) contains a list of items for the specific inspection areas that should be observed and evaluated. Items that are not listed on the job aid may also be evaluated during the inspection. This job aid can later be transferred to the GAR.

EBOOK VOLUME 12. SURVEILLANCE

12.3.5.9. TASK OUTCOME.

A. Complete the GAR.

B. Completion of this task can result in the following:

- Satisfactory completion of the line check observation
- Communicate concerns/findings to the Office Manager
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

12.3.5.11. FUTURE ACTIVITIES. Continued airmen observations.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 3. COMMON PART 121 AND 135 INSPECTIONS

Section 6. Crew Member and/or Dispatcher Records Inspection for Part 121 and 135

12.3.6.1. GACA ACTIVITY REPORT (GAR).

A. GAR 1627 (OP)

B. GAR 8627 (CS)

12.3.6.3. GENERAL. This section provides direction and guidance to aviation safety inspectors (Inspectors) for the inspection of crew and dispatcher qualification, training, and currency records of General Authority of Civil Aviation Regulation (GACAR) Part 121 and Part 135 operators. The objective of a crew and dispatcher records inspection is to determine whether or not the operator's records provide documentation that the operator has complied with regulatory training and qualification requirements. The inspection shall establish whether or not the operator is keeping the required records and whether or not the required training and qualification events are being conducted. Before conducting a records inspection, Inspectors must be thoroughly familiar with Volume 3, Chapter 11, Section 1, Operator Recordkeeping for GACAR Part 121, 125, 133 and 135 and GACAR §§ 121.839(d), 121.1505 or 135.689 as applicable.

12.3.6.5. PROCEDURES FOR CONDUCTING A RECORDS INSPECTION. This paragraph contains a general description of the procedures Inspectors will use when conducting records inspections. Inspectors may modify these guidelines to meet local conditions.

A. Location. Inspectors normally conduct a records inspection at the place where the operator maintains the records. The inspection process does not require that the operator surrender records, even temporarily, and records may not be removed from the operator's premises without the operator's permission. Should an agreement be reached for Inspectors to remove records, the operator must be given an itemized receipt for all records.

B. Preparation and Initial Briefing. Normally, advance notice, to the operator, of a planned records inspection is appropriate.

- 1) An introduction and initial briefing should be given to the operator. The briefing should

EBOOK VOLUME 12. SURVEILLANCE

describe the purpose of the inspection, what records will be required, and that a debriefing will take place at the conclusion of the inspection.

2) Prior to conducting any records inspections, Inspectors must become familiar with the operator's system of recordkeeping and become familiar with which specific records are available at the facility. This familiarization is particularly important when the operator is using a computer based recordkeeping system as detailed in Volume 3, Chapter 11, Section 4.

3) Prior to their arrival, inspectors should prepare a list of records to be inspected since a records inspection uses the operator's work space and usually takes time away from an employee's assigned duties. Preplanning and preparation for a record inspection will result in as little disruption to the operator's work routine as possible.

NOTE: Information from previous records inspections that are contained in the GAR should be accessed to aid the Inspector in determining the strategy and scope of the inspection.

C. Records Selection. Before conducting a records inspection, Inspectors must determine the number of records to be examined, which categories of the records that will be inspected, and to what depth records will be scrutinized. Volume 12, Chapter 1, Section 1, Surveillance Policies and Procedures, provides general guidance to Inspectors for determining the actual number of records to examine.

D. Records Handling. Care should be taken to keep records as intact as the operator presents them. The preferred procedure is for Inspectors to take only a few records at a time, examine them, then return that batch to the operator before starting on another batch. If it is necessary or desirable to obtain a copy of a record, the operator may not be willing or able to provide it. In this case, Inspectors must make arrangements for copies.

E. Errors or Omissions in Records. A records inspection is not an investigation, yet Inspectors may find errors or omissions in an operator's records. Minor errors and omissions may not constitute a lack of compliance on the part of the operator and may not require the Inspector to initiate enforcement action. Some errors or omissions, though, may require further action. For example, a crew member training record may be found that does not indicate that required recurrent training was accomplished.

EBOOK VOLUME 12. SURVEILLANCE

- 1) Further investigation may produce evidence that the training actually was completed. This omission may easily be corrected on the spot by the operator and may preclude the need for the Inspector to initiate enforcement action. In this case, the Inspector should record that the problem occurred, was brought to the operator's attention, and was corrected on the spot by the operator. The Inspector should discuss, with the operator, methods for preventing a repetition of the problem and should record the operator's intended fix.
- 2) If the operator cannot produce evidence that the training was conducted, the Inspector shall record the facts so that an investigation can later be opened according to Volume 13, Compliance Enforcement and the Resolution of Identified Safety Deficiencies. The Inspector who discovers the discrepancy is responsible for recording the finding in the applicable repository and initiating an investigation.

12.3.6.7. CATEGORIES OF RECORDS. This paragraph lists the airman and dispatcher records required by GACAR §§ 135.689 and 121.1505. Some or all of the categories are required for pilots, flight engineers, cabin crew members, flight and ground instructors, designated examiners, check pilots and aircraft dispatchers. Volume 3, Chapter 11, Section 3 gives guidance as to the retention period for each of these categories of records.

A. Airman Training and Qualification Records. The operator's recordkeeping procedures should be reviewed to ensure that the training and qualification required for an individual's present duty assignment is documented. Individual records should be reviewed according to the sampling plan to verify that the operator is correctly managing the training and qualification program.

- 1) The training and qualification requirements of GACAR Part 121 and 135 can be complex (see Volume 3, Chapter 21).
- 2) GACAR §§ 121.839(d) and 135.377 require that the documentation of ground, flight, or qualification segments contain a certification by the instructor, supervisor, or check pilot that the crew member or dispatcher is knowledgeable and proficient. In an electronic recordkeeping system, the certification does not have to be made by means of a signature.

B. Medical Qualification Records. Inspectors should observe that any required medical certificates are current and appropriate to the applicable airman certificate.

EBOOK VOLUME 12. SURVEILLANCE

C. Route, Special Aerodrome, Area Qualification Records. Inspectors must ensure that operators have documented that the pilot in command (PIC) has met the special currency requirements under GACAR §§ 121.773, 121.777 or 135.353. Inspectors must also ensure that operators with the authority to conduct flights in special use airspace document the successful completion of required training and qualification for each flight crew member.

D. Operating Experience or Operating Familiarization Records. Documentation should verify that operating experience or operating familiarization has been accomplished.

- 1) All GACAR Part 121 crew members and GACAR Part 135 PICs in scheduled operations must have completed the required operating experience prior to being assigned unsupervised duty in revenue service.
- 2) GACAR Part 121 PICs who have completed initial upgrade training for an operator that uses approved simulator training under GACAR § 121.859(c) must have been observed by an Inspector during operating experience.
- 3) Aircraft dispatchers must have completed operating familiarization.

E. Recency of Experience Records. This category refers to events, other than required checks, that operators must accomplish within a specified time period to remain qualified to serve in revenue operations.

- 1) Pilots must complete 3 takeoffs and landings each 90 days. GACAR § 121.769 requires that the landings be made in the aircraft type. GACAR § 135.347 requires that the landings be made in category and class and, if a type rating is required, in type. GACAR § 135.347 also requires that a pilot complete 3 night landings within the previous 90 days to be eligible to serve at night. Training in night landings is required by GACAR Part 121, Appendix B.
- 2) Flight engineers must have acquired 50 hours or a proficiency check within the past 6 months.

F. Check Pilot, Aircrew Program Designee (APD), and Designated Examiner (DE) Records. Operator records should verify that check pilots (to include APD and DE) have completed appropriate training, have maintained currency in the crew position they are evaluating, and that letters of authorization or designation have been maintained. The Inspector should observe

EBOOK VOLUME 12. SURVEILLANCE

that operators record the number of qualification functions being performed by check pilots.

G. Special Training and Testing Requirements. The Inspector should observe that operators that conduct such operations as air ambulance operations keep records of specialized training.

H. Employment History. Inspectors should ensure that the operator's flight crew member records document action taken concerning an individual's release from employment for physical or professional disqualification as required by GACAR §§ 121.1505(a)(2) or 135.689(a)(4)(ix).

12.3.6.9. TASK OUTCOME.

A. Complete GAR Record

B. Completion of this task can result in the following:

- Satisfactory inspection
- Communicate concerns/findings to Office Manager
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

12.3.6.11. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, other job tasks, and/or additional coordination is required between the Inspector and the Office Manager.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 3. COMMON PART 121 AND 135 INSPECTIONS

Section 7. Training Program Inspection (Operations) for Part 121 and 135

12.3.7.1. GACA ACTIVITY REPORT (GAR).

A. GAR 1626 (OP)

B. GAR 8626 (CS)

12.3.7.3. GENERAL. This section contains direction and guidance to be used by aviation safety inspectors (Inspectors) (Operations) for conducting training program inspections. The Inspector's objective is to ensure that the operator's training program complies with regulatory requirements and that instructional methods are effective. Principal Operations Inspectors (POIs) are required to schedule annual training program surveillance as part of a work program or when an operator's inspection reports, incidents, or accidents indicate deficiencies in crew member or dispatcher skill or knowledge..

NOTE: As part of the approval process, Inspectors must conduct training program inspections in Phase Four of the initial approval process of a training program (see Volume 4, Chapter 21, Section 2, Training Approval Process, for more information).

A. Training Program Inspection Areas. Training program inspections involve much more than simply observing "training in progress." The five primary inspection areas to be observed during training program inspections are:

- Training curriculums
- Courseware
- Instructional delivery methods
- Testing and checking methods
- Specific topics, as applicable

EBOOK VOLUME 12. SURVEILLANCE

B. Annual Inspection Plan. Training programs vary in their complexity depending on the operator's size, aircraft fleet diversification, number of crew members and dispatchers, training locations, and scope of operation. POIs may find that a single annual inspection is sufficient to verify the effectiveness of a simple operator's program. Inspection of a complex operator, however, requires a modular approach in which specific program components or locations are identified and inspected in progressive increments.

C. Special Inspections. POIs may determine that there is a need to initiate a "special emphasis" training program inspection. This type of inspection may be initiated for such reasons as incidents, accidents, or a series of deficiencies discovered through trend analysis of inspection data. "Special emphasis" training program inspections are relatively short in duration and usually focus on a limited area, such as training on the use of checklists or on windshear.

12.3.7.5. TRAINING PROGRAM INSPECTION PRACTICES AND PROCEDURES. Before beginning a training program inspection, Inspectors must become thoroughly familiar with the contents of Volume 4, Chapter 21. There are many methods of curriculum development and training methods that an operator may use. To obtain approval of a program, the operator must demonstrate that the program or program segment is in compliance with regulatory requirements and that it effectively prepares crew members and dispatchers to perform duties in revenue service. The guidance contained in Volume 4, Chapter 21, has been developed for this purpose. Inspectors should be aware of the competitive economic incentives operators have to improve the quality of, and to reduce the cost of, their training. Operators have great latitude in developing training programs tailored to their needs, and POIs have great latitude in approving individualized programs.

A. Preparation. Before conducting an inspection of a particular training program area, the Inspector should first obtain a copy of the operator's approved training program outline from the POI and become familiar with it. The Inspector should review the outline for regulatory compliance and for adequate subject coverage. Should the Inspector discover a discrepancy that requires a modification of the outline, a report must be made to the POI by means of the applicable data reporting process. Should the Inspector discover a serious discrepancy, the Inspector shall notify the POI immediately.

- 1) In addition to becoming familiar with an operator's training programs, Inspectors should review past surveillance records. A high rate of satisfactory performance usually indicates a strong, effective training program. Repeated cases of unsatisfactory performance, however, often indicate deficiencies in an operator's training program.

EBOOK VOLUME 12. SURVEILLANCE

B. On-Site Activity.

- 1) On arriving at the training site, Inspectors should introduce themselves to the person conducting the training, present their GACA credentials, and state the purpose of the inspection.
- 2) Inspectors shall refrain from active participation in the training being conducted and shall make every effort not to influence the training environment or the instruction in the subject matter.
- 3) Should an Inspector have comments on any of the areas of training, the Inspector may communicate this information to the appropriate individual(s) in private. The Inspector will reserve comments for debriefing of the instructor until after the training session or during an appropriate break in training.

C. Courseware Inspection.

While observing the training, Inspectors should evaluate the courseware. Inspectors should also evaluate whether or not the courseware and the instructor are effective in communicating the essential points of the lesson.

- 1) *Instructor Courseware.* The Inspector must observe whether or not the operator's instructor guides and lesson plans follow the approved outline. During observation, Inspectors must also ensure that instructor guides and lesson plans adhere to the following criteria:
 - Instructor courseware should be clearly titled for the appropriate curriculum segment
 - The instructor must be able to conduct detailed instruction for each subject area
 - Instructional material should be presented in a logical manner and in a sequence that is easy to use and comprehend
 - Courseware should provide references to applicable manuals of the operator
 - The instructor should use some means of determining that the students are properly assimilating the material (such as "responder" panels, multiple choice questions, or in-class exercises)

- 2) *Student Courseware.* The Inspector must evaluate various "self-teaching" training

EBOOK VOLUME 12. SURVEILLANCE

mediums such as video tapes, audiovisual (carousel-type) slide presentations, computer-based training (CBT) presentations, programmed learning publications, and home-study materials, to ensure that they satisfy the requirements of the approved outline. Training mediums must adhere to the following standards:

- The information must agree with the operator's manual and other publications
- The material must have sufficient detail to ensure that students comprehend the applicable subject area
- The courseware should include some means of testing student assimilation of information presented

D. Instructional Delivery Methods. This inspection area consists of the following inspection modules:

1) *Training Facilities/Environment Inspection.* The Inspector must ensure that the operator's training facilities and the instructional environment are conducive to learning. An Inspector must ensure that the facilities meet the following standards:

- Provide adequate seating space for students
- Provide storage areas for training materials
- Provide area for instructors to prepare their lessons
- Are free of distractions, which adversely affect instructional delivery (such as excessive temperatures, extraneous noise, poor lighting, and cramped classrooms and/or work spaces)

2) *Criteria for Instructors.* The Inspector must ensure that the quality of instruction provided by instructors in both ground and flight training segments is effective. Instructors must create an effective environment for training. The instructor must be flexible and alert to individual needs of the students. The following guidelines apply to instructors and/or flight instructors. Instructors must follow these criteria where applicable.

- a) Instructors.

EBOOK VOLUME 12. SURVEILLANCE

- Must know the operator's training policies and procedures, know how to complete required training forms, and must exhibit satisfactory instructional methods and techniques
- Must be knowledgeable in the specific area of instruction and must be able to present the material in a logical, clear, and organized manner
- Must be aware of the minimum equipment required for each element of training and must conform to the limitations imposed on the training element(s) by inoperative component(s)
- Should follow the applicable lesson plans, guides or other training aids to ensure that the material is properly presented as designed

b) Flight Instructors.

- Must be competent in the operation of the flight simulation training device (FSTD) and must be knowledgeable of the training elements that may be accomplished in that level of FSTD
- Should provide a thorough preflight briefing on all maneuvers and procedures that will be accomplished
- Should provide a thorough postflight debriefing to review each student's performance during a training session

E. Training Aids and Equipment. Inspectors must ensure that the operator's train aids and equipment are appropriate to the subject matter and that they operate properly. This includes audiovisual equipment, systems back mock-up boards, panel layouts, ground training devices, instructor station equipment, student responders (if applicable), and other related items.

- 1) All equipment used in the training program must operate and function in good working order. Replacement parts or components (such as slide projector lamps) should be readily available.
- 2) Any equipment designated to be used for "self-teaching" purposes, such as CBT platforms, must have clear operating instructions readily available for student use.

EBOOK VOLUME 12. SURVEILLANCE

3) Systems panels, layouts, boards, or mock-ups (such as aircraft exit mock-ups) should accurately represent the designated aircraft.

F. FSTD Inspection Module. The Inspector should ensure that the operator's full flight simulators (FFSs) and flight training devices (FTDs) are being adequately maintained and that they effectively replicate the associated aircraft.

NOTE: The Inspector is not responsible for conducting an evaluation of the FSTD. The Inspector is responsible, however, for determining the general condition of the equipment and the operator's general ability to maintain the equipment to those same standards while training is in progress.

G. Testing and Checking. In the inspection of an operator's training program, the Inspector must conduct observations of the elements that involve evaluation and qualification. These elements include, but are not limited to, check pilot programs and activities, training records, failure rates, and testing and checking standards. The Inspector must evaluate the following modules:

1) *Check Pilot Programs and Activities.* The Inspector should evaluate all elements that relate to check pilot training and qualification, check pilot records, and standardization programs (see Volume 4, Chapter 20 for specifics on check pilot inspection programs).

2) *Training Records.* The Inspector should evaluate the operator's training records for information regarding the overall effectiveness of an operator's training program. The testing and checking results available from the training records are an excellent source of information for POIs to establish positive or negative trends in the operator's training program.

3) *Oral and Practical Tests.* Inspectors should observe or conduct a number of airman certification evaluations as well as proficiency, competency, or line checks (as applicable) to determine the overall effectiveness of the operator's training program, check pilot programs, and testing and/or checking standards. Inspectors should place specific emphasis on flight events which require repetition or excessive instruction and should evaluate them according to the following criteria:

a) Testing and checking standards must comply with the regulations, the safe operating practices, and the guidance contained in this handbook.

EBOOK VOLUME 12. SURVEILLANCE

- b) Testing and checking standards must be consistently applied throughout the operator's training organization by its check pilot and instructor personnel.

NOTE: Testing and checking observations provide a direct measure of the effectiveness of courseware and instructional delivery methods. Inspectors should use the applicable job aids contained in this volume when observing and evaluating testing or checking in progress.

4) *Quality Control.* The Inspector shall observe the operator's quality control program to ensure that training effectiveness is continually monitored and that specific areas or items are corrected when necessary. The operator's quality control system must ensure that students do not proceed to the next module or training segment until satisfactory proficiency has been achieved. Additionally, training folders must be maintained by the operator while students are in a specific curriculum. Inspectors should review the information contained in student training folders to identify any deficient trends. This information coupled with the results of testing and checking, provides a quantifiable method for measuring training effectiveness.

12.3.7.7. TASK OUTCOME.

A. Complete GAR Record.

B. Completion of this task can result in the following:

- Satisfactory inspection
- Communicate concerns/findings to the Office Manager
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

63.7.9. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, other job tasks, and/or additional coordination is required between the Inspector and the applicable Office Manager.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 3. COMMON PART 121 AND 135 INSPECTIONS

Section 8. Operational Control Inspection for Part 121 and 135

12.3.8.1. GACA ACTIVITY REPORT (GAR).

A. 1636 (OP)

B. 8636 (CS)

12.3.8.3. BACKGROUND. This section contains direction and guidance to be used by principal operations inspectors (POIs) when planning, conducting, and reporting on operational control inspections. Operational control inspections are applicable to all General Authority of Civil Aviation Regulations (GACAR) Part 121 and 135 operators.

A. Inspection of Operational Control Functions at Line Stations. An operational control inspection is conducted at the facility where the operator authorizes or releases flights. Operators commonly perform limited operational control functions at line stations, but they may not authorize or release flights at these locations. The line station portion of operational control functions is inspected during station facilities inspections (see volume 12, chapter 3, section 9 for procedures and job aids). Inspectors conducting station facilities inspections should be familiar with the applicable material in Volume 4, Chapter 25, concerning dispatch release (scheduled Part 121), flight release (unscheduled Part 121) and flight locating (Part 135) systems.

12.3.8.5. OBJECTIVE. An operational control inspection has two primary objectives. The first objective is for the aviation safety inspector (Inspector) to ensure that the operator is in compliance with the minimum requirements of the applicable GACAR and the operations specifications (OpSpecs). The second objective is for the Inspector to ensure that the operator's system of control provides positive assurance of public safety. The operator must meet both objectives to obtain and retain an operating certificate under GACAR § 119.3. To make this determination, the Inspector must evaluate the operator to ensure (at a minimum) that the following criteria are met:

- Responsibility for operational control is clearly defined

EBOOK VOLUME 12. SURVEILLANCE

- An adequate number of operational control personnel are provided
- Applicable manuals contain adequate policy and guidance to allow operational control personnel and flight crews to carry out their duties efficiently, effectively, and with a high degree of safety
- Operational control personnel are adequately trained, knowledgeable, and competent in the performance of their duties
- Flight control personnel and flight crews have been provided with the necessary information for the safe planning, control, and conduct of all flights
- The operator provides adequate facilities
- The operator performs all operational control functions required by the regulations
- The operator performs all functions necessary to provide adequate operational control in the environment in which the operations are conducted
- Adequate emergency procedures and contingency plans have been formulated

12.3.8.7. PRACTICES AND PROCEDURES. Inspectors may conduct operational control inspections through various means e.g. systematic manual reviews, records inspections, observations, and interviews.

A. Inspector Preparation and Manual Review. Before starting an operational control inspection, the Inspector should become thoroughly familiar with the sections of Volume 4, Chapter 25 that are applicable to the operator. Inspectors must then become familiar with the operational control sections of the operator's operations manual (OM). This manual review is both the first step in the inspection process and preparation for subsequent steps. The job aids for the various aspects of the inspection contain the topics which should be included in the operator's manuals. Inspectors should use the job aids (See Figure 12.3.8.1, Figure 12.3.8.2, Figure 12.3.8.3 and Figure 12.3.8.4), located at the end of this section to determine if the necessary topics are covered and Volume 4, Chapter 25 to determine if the contents of the operator's manual are acceptable.

B. Records Checks, Interviews, and Observations. The Inspector should establish with the

EBOOK VOLUME 12. SURVEILLANCE

operator a mutually convenient time for conducting the records checks and interviews. The direction and guidance for Inspectors on the techniques of conducting records inspections is contained in Section 6 of this chapter.

- 1) Inspectors should conduct interviews with both management and working-level personnel to meet inspection objectives. Inspectors should plan these interviews so that the required information can be obtained without distracting personnel from their duties and responsibilities. To prevent intruding into actual operations, the Inspector should, if possible, conduct these interviews privately and away from the flight control center.
- 2) Inspectors should observe actual dispatch release operations. Before beginning these observations, an Inspector should request a tour of the operator's facility for orientation, during which the Inspector should observe a number of different people at work. The Inspector should ask questions; however, care must be taken not to distract or interfere with the individuals in the performance of their assigned duties. An effort should be made by the inspector to make observations during periods of peak activity, adverse weather, or during non-routine operations. POIs of large operators should arrange to have these observations conducted at random times throughout the year, preferably in periods of inclement weather.
- 3) Inspectors should observe competency checks being conducted to evaluate the knowledge level of dispatchers and the performance of the supervisor.

12.3.8.9. ADDITIONAL GUIDANCE FOR INSPECTING A PART 121 OPERATIONAL CONTROL PROCESS.

A. Background.

- 1) Large commercial operators are business entities operated for profit. Business managers prioritize and manage the operator's resources to optimize business and objectives in long-term planning and in daily operations. These objectives and decisions have a close relationship with the operations management (see Figure 12.3.8.4).
- 2) For scheduled operations, the dispatcher and the pilot in command (PIC) are jointly responsible for operational control of flight operations in accordance with the regulations, operations specifications (OpSpecs), and company procedures. For unscheduled operations, the person authorized by the operator to exercise operational control (usually

EBOOK VOLUME 12. SURVEILLANCE

the Director of Operations (DO), or his designee) and the PIC are responsible for operational control in accordance with the regulations, OpSpecs, and company procedures.

3) Many operators have established an organization, generally identified as Systems Operations Control (SOC), to integrate business management and operational control functions. By integrating these functions, safety and regulatory compliance are properly considered in business decisions. The manager of the SOC is generally responsible for coordinating all functions in the SOC center. He acts as a support mechanism to the dispatcher or the designated individual (supplemental) to ensure the safest operation is conducted. While SOC business management may be overseen by corporate functions, such as marketing, customer service, and finance, Inspectors should determine that the operational control decision-making is not influenced by the marketing or financial motivation of the company.

B. Additional Inspector Procedures.

1) Each Inspector should determine that his operator's manuals have documented processes that describe a clear separation between business management and operational control. The operator's manuals should have clear guidance showing the position descriptions, duties, responsibilities, and authorities of those involved in all aspects of operational control, such as:

- Director of Operations (DO)
- Chief Pilot
- Dispatcher (scheduled operations)
- Person authorized to exercise operational control (unscheduled operations)
- Pilot-in-command (PIC)
- Manager, Flight Crew Scheduling
- Manager, Maintenance Control
- Manager, Systems Operations Control (SOC)

EBOOK VOLUME 12. SURVEILLANCE

2) Each Inspector also should determine that his operator's operations manual (OM) outline the scope of responsibility and limitations on decision-making recommendations and the line of communications for company departments not directly related to operational control, but which could influence or affect operational control decisions.

NOTE: Refer to the operational control diagram in Figure 12.3.8.4.

NOTE: It should be emphasized that all operational control personnel are committed to safety first, followed by regulatory compliance and sound business sense. A corporate philosophy should include the fact that the dispatcher, the PIC, and/or the DO, or other authorized person has the authority to modify a business decision for safety or regulatory reasons.

3) Each Inspector should ensure that the operator's OM and checklists contain clear and concise statements of corporate policies and procedures concerning operational control, particularly as they relate to emergency/non-normal situations.

4) Outside participants in the operational control process (business decision makers) should not place undue pressure on a PIC's ability to exercise his emergency authority. To prevent such pressure, an Inspector should see that the operator's emergency/non-normal checklists contain the statement, "Land as soon as Possible or Practical," in at least the areas stipulated by the manufacturer, as in the case of Fire Indication or Flight Control Problems, etc. In addition, the last item on the appropriate emergency/non-normal checklist should read, "End of Procedures," to help a flight crew understand that the "GACA-approved Emergency/Non-Normal Checklist" is now complete. Notwithstanding the PIC's, aircraft dispatcher's, and DO's authority to evaluate the performance and handling capabilities of the aircraft, weather, navigational facilities, and landing surface conditions, any outside influence after the completion of the checklist may be construed as "in-flight trouble shooting." Upon completion of the checklist, the PIC should evaluate the current status of the aircraft and systems to facilitate his decision on the safety of continued flight versus diversion. The critical nature of this decision rests solely with the PIC and operational control group.

5) Inspectors should determine that the Emergency Operations sections of the operator's manuals give clear guidance as to when the PIC must declare an emergency and execute his emergency authority. It should also provide guidance as to when the aircraft dispatcher may declare an emergency apart from the PIC; for example, when communication with the PIC is

EBOOK VOLUME 12. SURVEILLANCE

impossible or impractical. This guidance should indicate that the aircraft dispatcher may take any action he considers necessary under the circumstances. Guidance should include clear, concise procedures regarding communications with the PIC, dispatch, and/or air traffic control (ATC).

6) Certain dispatch procedures are extremely important, particularly in operators with moderate to heavy dispatcher workloads. Inspectors must consider that, under normal circumstances, a dispatcher simultaneously monitors several aircraft in flight, works on releases, and exercises coordination functions. When an emergency occurs, or is in progress, and is not isolated, the dispatcher's workload greatly increases. This may lead to errors or omissions that could further jeopardize safety of flight. Inspectors should determine that the operator's manuals address these procedures during emergencies:

- dispatcher handling of emergencies
- transfer of authority and responsibility to another qualified dispatcher or qualified dispatcher supervisor due to increased workload during handling of an emergency or abnormal situation
- isolation of the emergency
- level of emergencies to be handled by inexperienced dispatchers
- handling of emergencies by inexperienced dispatcher

7) Inspectors should audit flight crew member training programs (ground and flight) to see that emergency/ non-normal operation policies and the PIC's responsibilities in declaring an emergency are emphasized.

8) Inspectors should review both crew resource management (CRM) and dispatcher resource management (DRM) training programs to verify that both the decision-making process and effective communications are addressed. All participants in the operational control decision team should be encouraged to attend these training programs.

9) Operators should be encouraged to develop a course curriculum for "Captain's Leadership." The contents of this training should be developed around corporate cultures, policies, reinforcement of CRM and DRM, and the PIC's and dispatcher's authority and

EBOOK VOLUME 12. SURVEILLANCE

responsibilities as they directly relate to safety and operational control.

10) Operators should be encouraged to develop realistic situational scenarios for dispatcher training in handling various levels of emergencies. These scenarios would be required test items in initial and recurrent dispatcher competency checks. The scenario testing would also serve to frequently test procedures and communications during emergencies.

12.3.8.11. TASK OUTCOME.

A. Complete GAR Record

B. Completion of this task can result in the following:

- Satisfactory inspection
- Communicate concerns/findings to the Office Manager
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

12.3.8.13. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, other job tasks, and/or additional coordination is required between the Inspector and the applicable Office Manager.

EBOOK VOLUME 12. SURVEILLANCE

Figure 12.3.8.1. Dispatch Release Job Aid (Scheduled Part 121)

Inspectors should mark the appropriate response to each item in the “Yes/No” column. Use the “GACA Response” column for notes, regulatory references, or other helpful information. Use the “Operator Reference” column to identify where the item is covered in the operator’s manual system.

ITEM	YES/NO	GACA RESPONSE	OPERATOR REFERENCE
A. AUTHORIZED OPERATIONS.			
(1) Are the operations that may and may not be conducted according to the OpSpecs (including areas of operation) clearly specified?			
(2) Are there clear definitions of scheduled and unscheduled operations? Are there clear definitions of the rules under which each of these operations is conducted?			
(3) Are the applicable regulations identified and the operator’s policies applicable to each type of operation clearly stated?			
B. MANUALS.			
(1) Is there a section of the operations manual (OM) in which the policy and guidance for operational control has been collected for the guidance of flight crews and dispatchers?			
(2) Are the topics listed on this job aid adequately covered?			
(3) Is the applicable section of the OM readily available to dispatchers and flight crews while they perform their duties?			
(4) Is the copy of the operator’s OM that is available to dispatchers or flight crews current?			
C. ORIGINAL RELEASE.			
(1) Are the conditions clearly stated under which a flight may and may not be dispatched?			
(2) Are the conditions stated under which a flight must be rerouted, delayed, or cancelled?			
(3) Does the dispatch release contain all required elements?			
(4) Are limitations required in the remarks of the release?			
(5) Is a written copy of weather reports and forecasts (including PIREPs) and NOTAMs attached to the release and provided to the flight crew?			
D. RESPONSIBILITY FOR PRE-DEPARTURE FUNCTIONS.			

EBOOK VOLUME 12. SURVEILLANCE

(1) Are the responsibility and procedures for accomplishing the following functions clearly specified?			
Crew assignment			
Load planning			
Flight planning			
Release of the aircraft from maintenance			
Control of MEL and CDL limitations			
Weight and balance			
(2) Have adequate procedures for cross-checking and verifying these activities been established?			
(3) Is each of these procedures effective?			
(4) What means has the operator established for the PIC and dispatcher to ensure that each of these functions has been satisfactorily accomplished before the aircraft departs?			
E. DISPATCHER BRIEFING.			
(1) How do the operator's procedures provide for briefing of the PIC by the dispatcher?			
(2) Is the minimum content of the briefing specified and adequate?			
F. DUAL RESPONSIBILITY.			
(1) How are the signatures of both the PIC and the dispatcher on the dispatch release accomplished?			
(2) Is the PIC's obligation to operate the flight according to the release, or to obtain an amended release, clearly stated?			
G. FLIGHT-FOLLOWING.			
(1) Are the dispatcher's flight-following requirements and procedures clearly stated?			
(2) Is policy and guidance provided to flight crews and dispatchers for monitoring fuel en route?			
(3) Are flight crew reporting requirements and procedures clearly stated?			
(4) Are there specified procedures for dispatchers to follow when a required report is not received?			
(5) Is a record of communication made and retained?			
H. INABILITY TO PROCEED AS RELEASED.			
(1) Is a policy stated concerning the PIC's latitude to deviate from a dispatch release without obtaining a new release?			
(2) Is there specific and adequate direction and guidance to PICs and dispatchers for the actions to take when a flight cannot be completed as planned (such as destinations or alternates below minimums, runways closed or restricted)?			

EBOOK VOLUME 12. SURVEILLANCE

(3) Are there procedures to follow in case of diversion or holding specifically and clearly stated?			
I. WEATHER.			
(1) Does the operator obtain weather reports from an approved source?			
(2) Are forecasts based on approved weather reports?			
(3) Does the operator have an adverse weather system?			
(4) Does the operator have adequate procedures for providing the latest available weather reports and forecasts to flight crews while the flight is en route?			
(5) Does the operator have adequate procedures for updating weather information when the aircraft is delayed on the ground?			
J. WEATHER MINIMUMS.			
(1) Is release under VFR authorized by OpSpec?			
(2) If so, has the forecast and actual weather allowed VFR flight to destination on those flights so released?			
(3) Have turbojet aircraft been released under VFR?			
(4) What IFR departure minimums are authorized by OpSpec?			
(5) When flights are released with the departure aerodrome below landing minimums, are takeoff alternates named on the dispatch release?			
(6) What destination weather minimums are authorized by OpSpec?			
(7) What weather minimums are authorized by OpSpec for "high minimums" captains?			
(8) How does the operator ensure compliance with the OpSpec (operable centerline lighting and 15% additional runway for turbojet operations for operations below 300 and $\frac{3}{4}$)?			
(9) When a flight is released to a destination below CAT I minimums, is that aircraft type authorized at CAT II or CAT III operations at that location according to OpSpec?			
(10) When destination alternates are required, are they named on the dispatch release?			
(11) Is the weather at the named alternate aerodrome equal or better than that required by OpSpec?			
(12) Is "marginal" defined for the designation of two alternates on the dispatch release?			
(13) Are two alternates designated when required?			
(14) How does the operator ensure that dispatchers are aware of these limitations before dispatching a flight?			

EBOOK VOLUME 12. SURVEILLANCE

(15) Do weather forecasts from the trip records show that these limits have been complied with for dispatch?			
K. SELECTION OF ALTERNATES.			
(1) Are policy, direction, and guidance provided for the selection of alternates?			
(2) Are terrain and engine-out performance considered in the alternate selection?			
L. NOTAMS.			
(1) Is the required NOTAM information provided?			
M. INFORMATION.			
(1) What provisions does the operator make for supplying aerodrome and navigation information?			
(2) What means does the operator use to comply with the requirement for an aerodrome data system? Is it adequate?			
(3) Are flight crews provided with written flight plans for monitoring flight progress and fuel burn?			
(4) How does the operator provide data to dispatchers on takeoff and landing minimums at each aerodrome?			
(5) Do dispatchers have immediate access to such data?			
(6) Are provisions made for nonstandard operations, such as inoperative centerline lighting?			
N. FUEL.			
(1) Are all the required increments of fuel provided (start and taxi, takeoff to arrival at destination, approach and landing, missed approach, alternate fuel, 45 minutes of reserve, and contingency fuel)?			
(2) Are the operator's policies concerning contingency fuel adequate for the environment in which operations are conducted?			
(3) Are there minimum fuel procedures specified for both dispatchers and PICs?			
(4) When aircraft are dispatched without an alternate, is adequate contingency fuel carried for un-forecast winds, terminal area delays, runway closures, and contingencies?			
O. EMERGENCY PROCEDURES.			
(1) Are emergency action procedures and checklists published and readily available for the following emergencies?			
In-flight emergency			
Crash			
Overdue or missing aircraft			
Bomb threat			

EBOOK VOLUME 12. SURVEILLANCE

Hijacking			
P. CHANGEOVER PROCEDURES.			
(1) Is an adequate overlap provided for the dispatcher being released to brief the oncoming dispatcher on the situation?			
Q. TRIP RECORDS.			
(1) Are the required trip records carried to destination?			
(2) Are trip records retained for 30 days?			
II. DISPATCHERS AND METEOROLOGISTS			
A. QUALIFICATION.			
(1) Are all dispatchers certified?			
(2) Have all dispatchers successfully completed a competency check within the eligibility period?			
(3) Have all dispatchers completed route familiarization within the preceding 12 calendar months?			
(4) How does the operator ensure that dispatchers are currently familiar with the areas in which they work?			
(5) How are meteorologists qualified?			
B. KNOWLEDGE OF WEATHER.			
(1) Are dispatchers knowledgeable about the following weather conditions?			
Surface (fronts, fog, low ceilings, etc.)			
Upper air (tropopause, jet streams)			
Turbulence(pressure and temperature gradients)			
Severe (low-level windshear, microburst, icing, thunderstorms)			
(2) Can dispatchers read a terminal report, forecast accurately, and interpret the meanings?			
(3) Can dispatchers read various weather depiction charts and interpret the meanings?			
(4) Can dispatchers read upper-air charts and interpret the meanings?			
C. KNOWLEDGE OF THE AREA.			
(1) Do dispatchers immediately recognize the aerodrome identifiers for the aerodromes in the area in which they are working?			
(2) Are dispatchers generally familiar with the aerodromes in the area in which they are working (number and length of runways, available approaches, general location, elevation, surface temperature limitations)?			
(3) Are dispatchers aware of which aerodromes, in the areas in which they are working, are special aerodromes, and why?			

EBOOK VOLUME 12. SURVEILLANCE

(4) Are dispatchers aware of the terrain surrounding the aerodromes in the areas in which they are working?			
(5) Are dispatchers aware of dominant weather patterns and seasonal variations of weather in the area?			
(6) Are dispatchers aware of route segments limited by drift-down?			
D. KNOWLEDGE OF AIRCRAFT AND FLIGHT PLANNING.			
(1) Are dispatchers aware of the general performance characteristics of each aircraft with which they are working(such as average hourly fuel burn, holding fuel, engine-out, drift-down height, effect of an additional 50 knots of wind, effect of a 4,000-foot lower altitude, crosswind limits, maximum takeoff and landing mass, required runway lengths)?			
(2) Can dispatchers read and explain all the items on the operator's flight plan?			
E. KNOWLEDGE OF POLICY.			
(1) Are dispatchers knowledgeable of the OpSpecs, particularly such items as authorized minimums?			
(2) Are dispatchers aware of the policies and provisions of the operator's manual as discussed under policies and procedures?			
F. KNOWLEDGE OF RESPONSIBILITIES.			
(1) Are dispatchers knowledgeable of their responsibilities under GACARs (such as briefing PIC; canceling, rescheduling or diverting for safety; in-flight monitoring; in-flight notification to PIC)?			
(2) Are dispatchers knowledgeable of their responsibilities under the operator's manual?			
(3) Are dispatchers aware of their obligations to declare emergencies?			
G. PROFICIENCY.			
(1) Are dispatchers competent in the performance of their assigned duties?			
(2) Are dispatchers alert for potential hazards?			
H. DUTY TIME.			
(1) Are the regulatory duty time requirements being complied with?			
III. SUPERVISORS			
A. QUALIFICATION. Are supervisors qualified and current as dispatchers?			
B. CONDUCT OF CHECKS. Are competency checks appropriate, thorough, and rigorous?			

EBOOK VOLUME 12. SURVEILLANCE

IV. FACILITIES AND STAFF			
A. PHYSICAL.			
(1) Is enough space provided for the number of people working in the dispatch center?			
(2) Are the temperature, lighting, and noise levels conducive to effective human performance?			
(3) Is access to the facility controlled?			
B. INFORMATION.			
(1) Are dispatchers supplied with all the information they require (such as flight status, maintenance status, load, weather, facilities?)			
(2) Is the information effectively disseminated and displayed? Can information be quickly and accurately located without overloading the dispatcher?			
(3) Are real-time weather displays available for adverse weather avoidance?			
C. COMMUNICATIONS.			
(1) Can a dispatcher establish rapid and reliable radio communications (voice or ACARS) with the captain when a flight is parked at the gate?			
(2) How much time does it take to deliver a message to an en route flight and get a response?			
(3) Are direct-voice radio communications available at all locations? Are they reliable? If communications facilities are shared with other airlines, does traffic congestion preclude rapid contact with a flight?			
(4) If hub-and-spoke operations are conducted, are there adequate communication facilities available to contact and deliver a message to all arriving flights within a 15-minute period?			
(5) Are backup communications links available in case of a failure of the primary links?			
D. MANAGEMENT.			
(1) Has overall responsibility for operations in progress been assigned to one individual who can coordinate the activities of all the dispatchers?			
(2) Have procedures been established for coordinating with central flow control?			
(3) Have adequate internal communications links been established?			
E. WORKLOAD.			

EBOOK VOLUME 12. SURVEILLANCE

(1) What method does the operator use to show compliance with the requirement to assign enough dispatchers during periods of normal operations and periods of non-routine operations?			
(2) Are the operator's methods adequate?			
(3) Do dispatchers have enough time to perform both dispatch and flight-following duties in a reasonable manner?			

EBOOK VOLUME 12. SURVEILLANCE

Figure 12.3.8.2. Part 121 Dispatch Release Job Aid (Unscheduled Operations)

Inspectors should mark the appropriate response to each item in the “Yes/No” column. Use the “GACA Reference” column for notes, regulatory references, or other helpful information. Use the “Operator Reference” column to identify where the item is covered in the operator’s manual system.

ITEM	YES/NO	GACA REFERENCE	OPERATOR REFERENCE
I. POLICIES AND PROCEDURES			
A. AUTHORIZED OPERATIONS. Are the operations that may and may not be conducted according to the Op Specs (including areas of operation) clearly specified?			
B. MANUALS.			
(1) Is there a section of the general operations manual (OM) in which the policy and guidance for operational control has been collected for the guidance of flight crews and the person exercising operational control?			
(2) Are the topics listed on this job aid adequately covered?			
(3) Is the applicable section of the OM readily available to personnel exercising control and flight crews while they perform their duties?			
(4) Is the copy of the operator’s OM current?			
C. ORIGINAL RELEASE.			
(1) Are the conditions clearly stated under which a flight may and may not be released?			
(2) Are the conditions stated under which a flight must be rerouted, delayed, or cancelled?			
(3) Does the flight release contain all required elements?			
(4) Are limitations required in the remarks?			
(5) What provisions are made for PICs and person exercising operational control to obtain weather reports and forecasts (including PIREPs and NOTAMs)?			
D. RESPONSIBILITY FOR PRE-DEPARTURE FUNCTIONS.			
(1) Are the responsibility and procedures for accomplishing the following functions clearly specified?			
Crew assignment			
Load planning			
Aircraft routing			

EBOOK VOLUME 12. SURVEILLANCE

Flight planning			
Release of the aircraft from maintenance			
Control of MEL and CDL limitations			
Mass and Balance			
(2) Have adequate procedures for cross-checking and verifying these activities been established?			
(3) Is each of these procedures effective?			
(4) What means has the operator established for the PIC and person exercising operational control to ensure that each of these functions has been satisfactorily accomplished before the aircraft departs?			
E. DUAL RESPONSIBILITY.			
(1) How is the concurrence of the person exercising operational control obtained before the PIC signs the release?			
(2) Is the PIC's obligation to operate the flight according to the release or to obtain concurrence of the person exercising operational control for an amended release, clearly stated?			
F. FLIGHT-FOLLOWING.			
(1) Are the person exercising operational control duties and procedures clearly stated?			
(2) Is policy and guidance provided to the person exercising operational control for monitoring flight movements?			
(3) Are the flight following procedures effective?			
G. INABILITY TO PROCEED AS RELEASED.			
(1) Is a policy stated concerning the PIC's latitude to deviate from a flight release without obtaining a new release?			
(2) Is there specific and adequate direction and guidance to PICs and the person exercising operational control for the actions to take when a flight cannot be completed as planned (such as destinations or alternates below minimums, runways closed or restricted)?			
(3) Are procedures to follow in case of diversion or holding specifically and clearly stated?			
H. WEATHER.			
(1) Does the operator obtain weather reports from an approved source?			
(2) Are forecasts based on approved weather reports?			

EBOOK VOLUME 12. SURVEILLANCE

(3) Does the operator have an adverse weather system?			
(4) Does the operator have adequate procedures for the flight crews to obtain the latest available weather report while the flight is en route?			
(6) Does the operator have adequate procedures for updating weather information when the aircraft is delayed on the ground?			
I. WEATHER MINIMUMS.			
(1) Is release under VFR authorized by OpSpec?			
(2) If so, do the forecast and actual weather allow VFR flight to proceed to destination on those flights so released?			
(3) Have turbojet aircraft been released under VFR?			
(4) What IFR departure minimums are authorized by OpSpec?			
(5) When flights are released with the departure aerodrome below landing minimums, are takeoff alternates named on the flight release?			
(6) What destination weather minimums are authorized by OpSpec?			
(7) What weather minimums are authorized by OpSpec for "high minimums" captains?			
(8) How does the operator ensure compliance with the OpSpec (operable centerline lighting and 15% additional runway for turbojet operations for operations below 300 and $\frac{3}{4}$)?			
(9) When a flight is released to a destination below CAT I minimums, is that aircraft type authorized at CAT II or CAT III operations at that location according to OpSpec?			
(10) When destination alternates are required, are they named on the flight release?			
(11) Is the weather at the named alternate aerodrome equal or better than that required by OpSpec?			
(12) Is "marginal" defined for the designation of two alternates on the flight release?			
(13) Are two alternates designated when required?			
(14) How does the operator ensure that the person exercising operational control is aware of these limitations before concurring with the release of a flight?			
(15) Do weather forecasts from the trip records show that these limits have been complied with for release?			
J. SELECTION OF ALTERNATES.			

EBOOK VOLUME 12. SURVEILLANCE

(1) Are policy, direction, and guidance provided for the selection of alternates?			
(2) Are terrain and engine-out performance considered in the alternate selection?			
(3) Is an alternate aerodrome always designated?			
K. NOTAMS.			
(1) Is the required NOTAM information provided?			
L. INFORMATION.			
(1) What provisions does the operator make for supplying aerodrome and navigation information?			
(2) What means does the operator use to comply with the requirement for an aerodrome data system? Is it adequate?			
(3) Are flight crews provided with written flight plans for monitoring flight progress and fuel burn?			
(4) How does the operator provide data to the person exercising operational control on takeoff and landing minimums at each aerodrome?			
(5) Does the person exercising operational control have immediate access to such data?			
(6) Are provisions made for nonstandard operations, such as inoperative centerline lighting?			
M. FUEL.			
(1) Are all the required increments of fuel provided (start and taxi, takeoff to arrival at destination, approach and landing, missed approach, alternate fuel, 30 minutes of reserve, and contingency fuel)?			
(2) Are there minimum fuel procedures specified for both the person exercising operational control and PICs?			
(3) Are the operator's policies concerning contingency fuel adequate for the environment in which operations are conducted?			
N. EMERGENCY PROCEDURES.			
(1) Are emergency action procedures and checklists published and readily available for the following emergencies?			
In-flight emergency			
Crash			
Overdue or missing aircraft			
Bomb threat			
Hijacking			

EBOOK VOLUME 12. SURVEILLANCE

O. CHANGEOVER PROCEDURES.			
(1) Is an adequate overlap provided for the person exercising operational control being released to brief the oncoming the person on the situation?			
P. TRIP RECORDS.			
(1) Are the required trip records carried to destination?			
(2) Are trip records retained for 30 days?			
II. THE PERSON EXERCISING OPERATIONAL CONTROL			
A. QUALIFICATION.			
(1) What means does the operator use to comply with the requirement that the person exercising operational control is competent? Is the operator's method effective?			
(2) How does the operator ensure that the person exercising operational control is currently familiar with the areas in which they work?			
(3) How are meteorologists qualified?			
B. KNOWLEDGE OF WEATHER.			
(1) Is the person exercising operational control knowledgeable about the following weather conditions? Surface (fronts, fog, low ceilings, etc.)			
Upper Air (tropopause, jet streams)			
Turbulence(pressure and temperature gradients)			
Severe (low-level windshear, microburst, icing, thunderstorms)			
(2) Can flight-followers read a terminal report, forecast accurately, and interpret the meanings?			
(3) Can the person exercising operational control read various weather depiction charts and interpret the meanings?			
(4) Can the person exercising operational control read upper-air charts and interpret the meanings?			
C. KNOWLEDGE OF THE AREA.			
(1) Does the person exercising operational control immediately recognize the aerodrome identifiers for the aerodromes in the area in which they are working?			
(2) Is the person exercising operational control generally familiar with the aerodromes in the area in which they are working (number and length of runways, available approaches, general location, elevation, surface temperature limitations)?			

EBOOK VOLUME 12. SURVEILLANCE

(3) Are the person exercising operational control aware of which aerodromes, in the areas in which they are working, are special aerodromes, and why?			
(4) Is the person exercising operational control aware of the terrain surrounding the aerodromes in the areas in which they are working?			
(5) Is the person exercising operational control aware of dominant weather patterns and seasonal variations of weather in the area?			
(6) Is the person exercising operational control aware of route segments limited by drift-down?			
D. KNOWLEDGE OF AIRCRAFT AND FLIGHT PLANNING.			
(1) Is the person exercising operational control aware of the general performance characteristics of each aircraft with which they are working (such as average hourly fuel burn, holding fuel, engine-out, drift-down height, effect of an additional 50 knots of wind, effect of a 4,000-foot lower altitude, crosswind limits, maximum takeoff and landing mass, required runway lengths)?			
(2) Can the person exercising operational control read and explain all the items on the operator's flight plan?			
E. KNOWLEDGE OF POLICY.			
(1) Is the person exercising operational control knowledgeable of the OpSpecs, particularly such items as authorized minimums?			
(2) Is the person exercising operational control aware of the policies and provisions of the operator's manual as discussed under policies and procedures?			
F. KNOWLEDGE OF RESPONSIBILITIES.			
(1) Is the person exercising operational control knowledgeable of their responsibilities under GACARs?			
(2) Is the person exercising operational control knowledgeable of their responsibilities under the operator's manual?			
G. PROFICIENCY.			
(1) Is the person exercising operational control competent in the performance of their assigned duties?			
(2) Is the person exercising operational control alert for potential hazards?			

EBOOK VOLUME 12. SURVEILLANCE

III. FACILITIES AND STAFF			
A. PHYSICAL.			
(1) Is enough space provided for the number of people working in the flight-following center?			
(2) Are the temperature, lighting, and noise levels conducive to effective human performance?			
(3) Is access to the facility controlled?			
B. INFORMATION.			
(1) Is the person exercising operational control supplied with all the information they require (such as flight status, maintenance status, load, weather, facilities)?			
(2) Is the information effectively disseminated and displayed? Can information be quickly and accurately located without overloading the person exercising operational control?			
(3) Are real-time weather displays available for adverse weather avoidance?			
C. COMMUNICATIONS. Can the person exercising operational control establish reliable communication with a PIC before release?			
D. MANAGEMENT.			
(1) Has overall responsibility for operations in progress been assigned to one individual who can coordinate the activities of all the people exercising operational control?			
(2) Have procedures been established for coordinating with central flow control?			
(3) Have adequate internal communications links been established?			
E. WORKLOAD.			
(1) What method does the operator use to show compliance with the requirement to assign enough people exercising operational control during periods of normal operations and periods of non-routine operations? Are the operator's methods adequate?			
(3) Do the person exercising operational control have enough time to perform operational control duties in a reasonable manner?			

EBOOK VOLUME 12. SURVEILLANCE

Figure 12.3.8.3. Part 121 Extended Over-Water Job Aid (Part 121)

Inspectors should mark the appropriate response to each item in the “Yes/No” column. Use the “GACA Reference” column for notes, regulatory references, or other helpful information. Use the “Operator Reference” column to identify where the item is covered in the operator’s manual system.

ITEM	YES/NO	GACA REFERENCE	OPERATOR REFERENCE
I. POLICIES AND PROCEDURES			
A. AUTHORIZED OPERATIONS.			
(1) Are the areas clearly specified in the operations manual (OM) in which extended range operations may be conducted according to the OpSpecs?			
B. MANUALS.			
(1) Is there a section of the OM in which the policy and guidance for extended over-water operations?			
(2) Are the topics listed on this job aid adequately covered?			
(3) Is the applicable section of the OM readily available to persons who exercise operational control, dispatch and flight crews while they perform their duties?			
(4) Is the operator’s OM current?			
C. ORIGINAL RELEASE.			
(1) Are the conditions clearly stated under which a flight may and may not be released in extended over-water operations?			
(2) Does OpSpecs allow dispatch under VFR conditions? Are all extended over-water operations conducted under IFR?			
(3) Are the conditions under which a flight must be rerouted, delayed, or cancelled clearly stated?			
(4) Are the destinations listed in the OpSpecs to which a flight may be dispatched when there are no alternates?			
(5) Are alternates listed for all flights conducted regardless of the weather?			
(6) Are alternates designated for all scheduled flights of six or more hours?			
(7) Have flights been released on scheduled flights of less than six hours without a destination alternative when an alternate was required?			
(8) Do weather forecasts from the trip records show that the limits and alternate weather minimums have been complied with for dispatch release/flight release?			

EBOOK VOLUME 12. SURVEILLANCE

D. FUEL.			
(1) Are all the required increments of fuel provided (start and taxi, takeoff to arrival at destination, approach and landing, missed approach, alternate fuel, 30 minutes of reserve, and contingency fuel)?			
(2) When aircraft are dispatched/released without an alternate, is adequate contingency fuel carried for un-forecast winds, terminal area delays, runway closures, and other contingencies?			
(3) Are there minimum fuel procedures specified for both PICs and dispatchers or person exercising operational control?			
(4) Are the operator's policies concerning contingency fuel adequate for the environment in which operations are conducted?			
E. RELEASE WITH SPECIAL FUEL RESERVES.			
(1) Is the operator authorized special fuel reserves by OpSpec? Do all flights released under this OpSpec have the required increments of fuel? Are the increments correctly computed (en route reserve and holding fuel?) Is adequate contingency fuel carried?			
F. PLANNED RE-RELEASE.			
(1) Does the operator conduct planned re-release according to OpSpec?			
(2) Is the re-release point common to both routes?			
(3) Is there separate operational analysis for the two routes prepared, and are they provided to the PIC and the dispatcher or person exercising operational control?			
(4) Is there fuel planning according to OpSpec?			
(5) Are there re-release messages transmitted, acknowledged, and recorded? Does the re-release message satisfy all requirements, including NOTAM and weather information?			
(6) Does the aircraft meet landing performance requirements at the intermediate destination?			
G. ENGINE-OUT PERFORMANCE.			
(1) How does the operator comply with single-engine-out and two-engine-out performance rules?			
(2) Is the operator's analysis accurate and complete?			
(3) Does the operator provide the PIC and dispatcher or flight-follower with multiple ETPs when required?			
(4) Is guidance provided for the use of single-engine and two-engine ETPs?			
(5) Does the OM provide adequate guidance for drift-down or determination of fuel dump requirements?			

EBOOK VOLUME 12. SURVEILLANCE

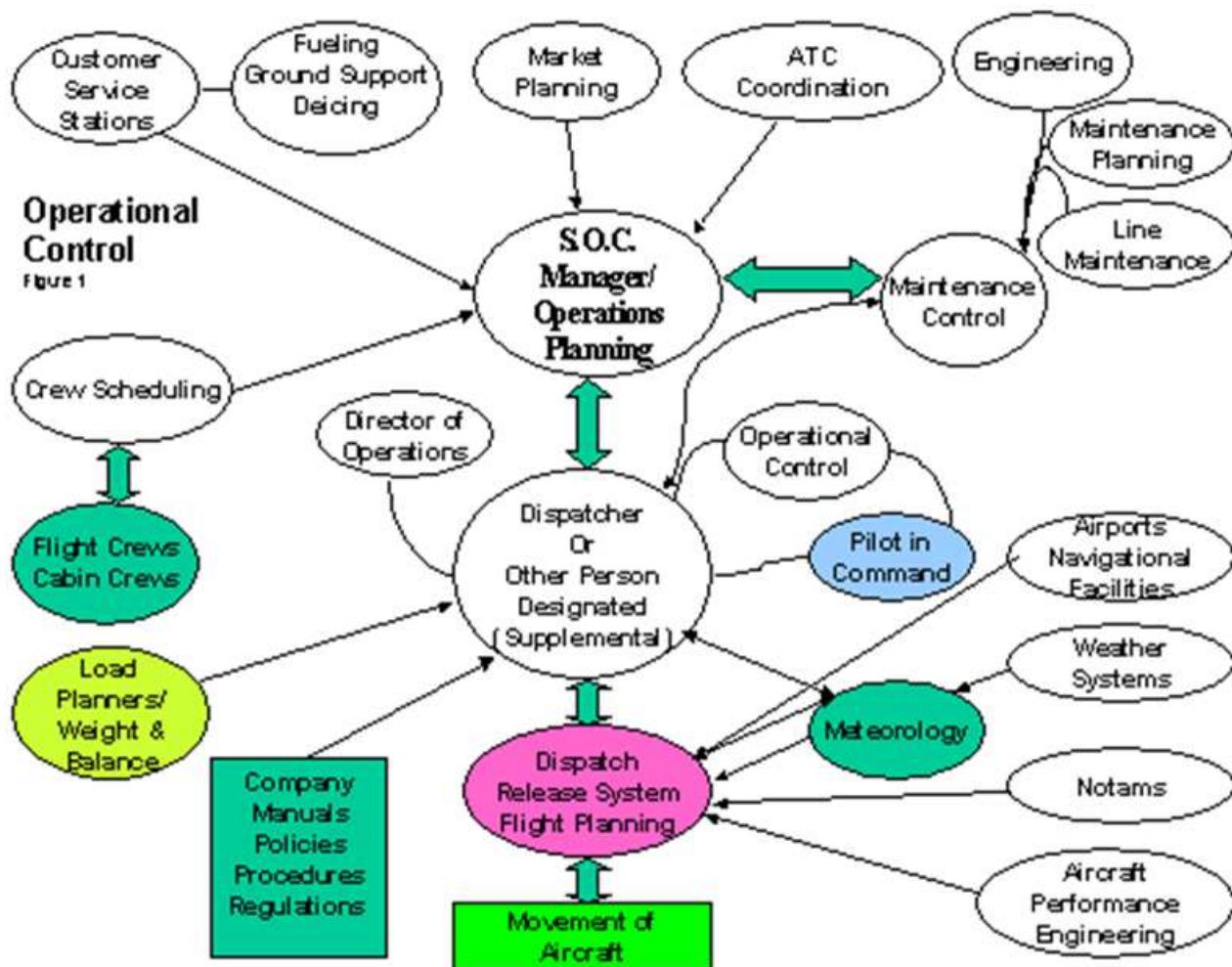
H. NOTAMS. Are NOTAMs provided when applicable?			
I. INFORMATION. How are track messages provided and checked against flight plans?			
J. MNPS PROCEDURES. Does the OM contain information and procedures for navigation in MNPS airspace?			
II. DISPATCHERS AND PERSON EXERCISING OPERATIONAL CONTROL			
A. QUALIFICATION.			
(1) Do dispatchers hold valid dispatcher certificates at foreign locations when required?			
(2) How does the operator ensure that dispatchers or the person exercising operational control are currently familiar with the areas in which they work? Are dispatchers given en route familiarization in extended over-water operations?			
B. KNOWLEDGE OF EXTENDED RANGE OPERATIONS.			
(1) Are dispatchers or the person exercising operational control knowledgeable in the performance characteristics of each aircraft with respect to over-water considerations(such as average hourly fuel burn, engine-out, drift-down height, engine-out cruise performance, effect of an additional 50 knots of wind on ETPs, effect of a 4,000-foot lower altitude, relationship of single-engine and 2-engine ETPs?)			
C. KNOWLEDGE OF THE AREA.			
(1) Do dispatchers or the person exercising operational control immediately recognize the aerodrome identifiers for the aerodromes in the area in which they are working?			
(2) Are dispatchers or the person exercising operational control generally familiar with the aerodromes in the area in which they are working (number and length of runways, available approaches, general location, elevation, surface temperature limitations)?			
(3) Are dispatchers or the person exercising operational control aware of which aerodromes are special aerodromes in the areas in which they are working, and why?			
(4) Are dispatchers or the person exercising operational control aware of dominant weather patterns and seasonal variations of weather in the area (such as monsoons and jet streams)?			

EBOOK VOLUME 12. SURVEILLANCE

(5) Are dispatchers or the person exercising operational control aware of the available en route alternates and the characteristics of these aerodromes?			
(6) Are dispatchers or the person exercising operational control aware of the available en route alternates and the characteristics of these aerodromes?			
D. KNOWLEDGE OF SPECIAL FUEL RESERVES AND PLANNED RE-RELEASE.			
(1) When special fuel reserves or planned re-release are authorized, are dispatchers or the person exercising operational control thoroughly versed in these procedures and requirements?			

EBOOK VOLUME 12. SURVEILLANCE

Figure 12.3.8.4 Operational Control



EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 3. COMMON PART 121 AND 135 INSPECTIONS

Section 9. Station Facilities Inspection for Part 121 and 135

12.3.9.1. GACA ACTIVITY REPORT (GAR).

A. GAR 1635 (OP)

B. GAR 8635 (CS)

12.3.9.3. GENERAL. This section contains direction and guidance to be used by aviation safety inspectors (Inspectors) for performing station facilities inspections. Station facilities operations are defined as those support activities required to originate, turn around, or terminate a flight. Station facilities inspections are conducted on General Authority of Civil Aviation Regulation (GACAR) Part 121 and 135 (scheduled) operators.

NOTE: Base inspections are conducted on unscheduled Part 135 operators, (see Volume 12, Chapter 9, Section 1, Base Inspection for Part 135).

A. Location. A station facilities inspection should be conducted at every location at which a GACAR Part 121 or 135 operator initiates and recovers flights. A station facilities inspection encompasses both operations and facilities.

B. Inspection Areas. Nine inspection areas have been identified as areas for Inspectors to observe and evaluate during a station facilities inspection. These inspection areas are defined as follows:

1. *Personnel.* This area refers to the personnel employed at the facility. Inspectors must evaluate the adequacy of staffing levels and the competency of assigned personnel in the performance of their duties.

2. *Manuals.* This area refers to the availability, currency, and content of the written guidance required by employees in the performance of their assigned duties.

3. *Records.* This area refers to those records that the operator is required to maintain relative

EBOOK VOLUME 12. SURVEILLANCE

to station activities. For example, operators are required to record transportation of dangerous goods (TDG) training for operations personnel. This area does not include those records inspected during a “records inspection.”

4. *Training.* This area refers to the adequacy of the training given to assigned personnel as demonstrated by their knowledge of their duties e.g. ground handlers, de-icing personnel. This area does not include crew member and dispatcher training.

5. *Facility/Equipment/Surface.* This area refers to the various physical elements required to support flight operations, such as ramp areas, blast fences, signs, signaling devices, lighting, passenger- and cargo-loading equipment, aircraft servicing, and towing equipment.

6. *Conformance.* This area refers to the operator’s employees’ compliance with the operator’s procedures and GACARs.

7. *Flight Control.* This area refers to the control and support of aircraft flight operations.

8. *Servicing.* This area refers to the operator’s procedures and standards required for the safe servicing and handling of its aircraft.

9. *Management.* This area refers to the effectiveness of the operator’s management and supervisory personnel.

12.3.9.5. GENERAL INSPECTION PRACTICES AND PROCEDURES. Inspectors who conduct station facilities inspections encounter a wide range of situations and operational conditions. Station facilities range from large physical plants (that have a permanently assigned station manager, numerous employees, and various departments) to a single counter manned by a single employee. A station facilities inspection may be conducted to provide an overall view of operations, or it may be focused on a specific area of interest. Inspectors should use the direction, guidance, and procedures that follow when conducting a station facilities inspection.

NOTE: The direction and guidance of this and the following paragraphs is general in nature. Not all of it may be appropriate in any given situation.

A. Planning for the Inspection. The Inspector should carefully plan a station facilities inspection before conducting it. The Inspector should review previous inspection reports,

EBOOK VOLUME 12. SURVEILLANCE

identify any areas of weakness previously reported, and review the corrective actions that were taken. If applicable, the Inspector should contact the appropriate principal operations inspector (POI) to determine if there are any specific areas that may currently need inspection. The Inspector should coordinate with the station manager ahead of time to establish a date and time for conducting the inspection.

B. Briefing for the Inspection. Before beginning the inspection, the Inspector should request that the station manager provide a briefing on the facility operation, including its assigned personnel and operational procedures. In turn, the Inspector should brief the station manager and the staff on the purpose and scope of the inspection. This discussion should include the following points:

- Purpose of the facility inspection
- Introduction of Inspectors
- The specific areas to be inspected
- Inspection authority (GACAR part 119.59 and/or part 135.73)
- The proposed time and place of the exit briefing

C. Preliminary Tour. The actual inspection should begin with a tour of the facility. The tour should provide the Inspector with an overview of the operation and the location of individual sections. Inspectors should introduce themselves to section supervisors and other employees during the facility tour to become familiar with each section. The tour should include those areas of the facility that are utilized by the flight and cabin crews for dispatch, briefing, and flight planning; and those areas that are utilized for passenger loading, cargo loading, mass and balance preparation, and ramp areas.

12.3.9.7. SPECIFIC INSPECTION PRACTICES AND PROCEDURES. Inspectors should use the direction, guidance, and procedures that follow when conducting a station facilities inspection (See Figure 12.7.3.1 Station Facility Inspection Job Aid).

A. Personnel. The Inspector should review the staffing of the facility. During this review, the Inspector should attempt to determine whether or not the station is adequately staffed and whether or not assigned personnel are competent in their duties. The Inspector may accomplish

EBOOK VOLUME 12. SURVEILLANCE

this by observing individuals as they perform their assigned job tasks. For example, the Inspector may review recently completed forms for accuracy and may interview personnel, while being careful to avoid interfering with their duties.

B. Manuals. The Inspector should review the operator's manual or system of manuals for the operation of the facility to determine whether or not the manuals are on hand, current, readily available to personnel, and adequate in content. Additional guidance for conducting a manuals' inspection is contained in Section 3 of this chapter.

1) *On-Hand Requirements.* Inspectors should determine what manuals the operator requires its station personnel to maintain and then determine whether or not these manuals are on hand. As a result of the inspection, the Inspector should be able to conclude that either these manuals are sufficient for the purposes of the station or that station personnel require additional information which was not available.

2) *Currency Requirements.* The Inspector should also ensure that the operator's manuals are current and that any required revisions are accurately posted. The Inspector should obtain information on the revision status of manuals from the POI before beginning the inspection.

3) *Content Requirements.* Each manual or publication should be checked by the Inspector to ensure that it includes that information and guidance necessary to allow personnel to perform their duties and responsibilities effectively and safely. Depending on the scope of operations conducted at the station, direction and guidance may be required in the following operational areas:

- Refueling procedures
- Aircraft towing or movement requirements/procedures
- Mass and balance manual/procedures
- Operation of ground service equipment/procedures
- Aircraft flight manual (AFM) for types of regularly scheduled aircraft
- Personnel training manual

EBOOK VOLUME 12. SURVEILLANCE

- Current emergency telephone listing
- Accident/incident telephone listing
- Security training and procedures
- Severe weather notification procedures
- Carry-on baggage procedures
- Identification or handling of dangerous goods
- Instructions and procedures for notification of the pilot-in-command (PIC) when there are dangerous goods aboard
- Procedures for passenger operation of electronic devices
- Contract service (if applicable)
- Trip records disposition

C. Records. Available records relative to station operations should be inspected, such as communications records and station personnel training records. In a small facility, a records inspection and a facility inspection could be conducted on the same day. In most facilities, however, records inspections and facilities inspections should be planned and conducted separately.

NOTE: Inspection of crew and dispatcher training records, trip records and flight and rest records is a separate inspection activity.

D. Training. The Inspector should review the training conducted for the various classifications of station personnel. The regulations do not specify training requirements either by subject or frequency for station personnel, yet these personnel should receive both initial and recurrent training in assigned job functions. This training may be either formal classroom training or on-the-job training. Specific areas of training include the following:

- Duties and responsibilities

EBOOK VOLUME 12. SURVEILLANCE

- Dangerous goods recognition and/or handling
- Passenger handling and protection
- Load planning and mass and balance procedures
- Communications procedures
- Manual backup procedures in case of computer or communications equipment failures
- Aircraft servicing and ramp operations
- First aid and emergency actions

E. Facility/Equipment/Surface. The operator's facilities must be adequate to provide safe operating conditions for both aircraft and personnel. The Inspector should conduct an evaluation to ensure that the following conditions are met:

- 1) *Ramp Maintenance.* Ramp areas should be clean and clear of foreign objects. The operator should have a regular program for inspecting, cleaning, and repainting ramp surfaces.
- 2) *Passenger Safety.* Employees and passengers must be protected from jet or prop blast. If a jetway is unavailable or not used, Inspectors should evaluate passenger-handling procedures and facilities and give particular attention to the movement of passengers across ramps. The operator must have established procedures for assisting handicapped passengers, especially when boarding ramps are not used.
- 3) *Night Operations.* To ensure that adequate lighting is available and is being used for safe ground operations, Inspectors should conduct observations during night operations, if feasible.
- 4) *Station Manager Responsibilities.* The operator's management usually assigns station managers with the responsibility for maintaining surveillance of the aerodrome and for reporting aerodrome hazards and any new obstructions. Inspectors should determine what responsibilities have been assigned to the station manager and how those responsibilities are being discharged.

EBOOK VOLUME 12. SURVEILLANCE

5) *Aerodrome Deficiencies.* Inspectors are not tasked with conducting a physical inspection of the aerodrome during a station facilities inspection; however, any aerodrome deficiencies observed during a station facility inspection must be noted by Inspectors and must be recorded for transmittal to the regional aerodromes division.

F. Conformance. In each area to be inspected, Inspectors should evaluate the operator's procedures for compliance with provisions of the applicable GACAR parts. In addition, the operator's employees must comply with the operator's directives as provided for in the operator's manuals.

G. Flight Control. The inspection of a station's flight control function should be conducted while actual arrival or departure operations are in progress. This allows the Inspector to get an overall view of the effectiveness of the operation and its assigned personnel. Background information on operational control is contained in Volume 4, Chapter 25. Direction and guidance for conducting operational control inspections is contained in Section 8 of this chapter. Inspectors should familiarize themselves with these sections before conducting a station facilities inspection.

1) *Operational Control Inspection.* When a dispatch/flight-following center is located within the station, an operational control inspection should be conducted in conjunction with the station facilities inspection. Unless the station is small, these two Inspections should be planned and conducted as separate events.

2) *Line Station Functions.* Operators often exercise operational control from a central location and assign the line stations with related support functions, such as delivering dispatch releases and flight plans to the flight crew. In this situation, Inspectors should determine which functions are responsibilities of the station. Inspectors should evaluate station personnel in the performance of these functions. Inspectors should also evaluate the effectiveness of the division of responsibility between the central operational control center and the line station.

3) *Load Planning.* Inspectors should determine who is assigned responsibility for load planning and mass and balance control. Passenger and cargo mass must be accurate and reliably obtained, collected, and transmitted. Personnel must be adequately trained. Procedures should be simple and effective. When computerized systems are used, there must be adequate backup provisions for computer failure. When station personnel are required to perform manual calculations in case of computer failure, the operator must ensure continued

EBOOK VOLUME 12. SURVEILLANCE

proficiency of personnel in making these calculations. Inspectors should ask these individuals to perform a manual calculation and compare the individual's solution to the computer solution.

4) *Weather Information.* Inspectors should determine the approved source of weather for the station. If weather information is provided by a supplementary aviation weather reporting station (SAWRS), the SAWRS co operator should be evaluated (see volume 3, chapter 26 for additional information on sources of weather information).

H. Servicing. The servicing area of a station facilities inspection covers routine loading and servicing as opposed to aircraft maintenance activities. While Inspectors (Operations) should record and report observations they believe to be maintenance discrepancies, they are not assigned to inspect the maintenance activities. The preferred procedure is for station facilities inspections to be conducted by a joint operations/airworthiness team. Inspectors should evaluate areas of concern to operations personnel, such as the manner in which logbooks are handled and how MEL/CDL provisions are complied with. The Inspector should observe and verify safe practices in the operator's service operations and that adequate personnel are available for the required aircraft servicing. Operations to be observed should include, but are not limited to, the following:

- Fueling (ensuring that proper procedures are being followed)
- Deicing (ensuring that the correct ratio and temperature of the glycol/water mix is being used and that all snow and ice is removed)
- Marshaling (ensuring safe operation and correct procedures)
- Chocks/Mooring (ensuring chocks are in place, the parking ramp is relatively level, and brakes are set or released, if applicable)

I. Management. Throughout the inspection, Inspectors should observe managers and supervisors and evaluate the organizational structure, particularly the effectiveness of vertical and horizontal communications. Managers and supervisors should be thoroughly aware of their duties and responsibilities and those of the personnel they supervise. Areas that Inspectors must observe and evaluate include the following:

1) *Outside Contractors.* If the operator contracts with other companies for station services,

EBOOK VOLUME 12. SURVEILLANCE

the station manager should have established adequate controls over their performance. The manager must assure that adequate training is provided to contractor personnel.

2) *Contingency Plans.* The station management should be prepared for contingencies. Action plans should be available for use in case of such events as accidents, injury, illness, fuel spills, bomb threats, hijacking, severe weather, and hazardous material spills. Station personnel should know the location of these plans. Plans should contain emergency notification checklists and procedures for suspending or cancelling operations. Emergency telephone listings should be posted in obvious locations and be clearly legible.

12.3.9.9. TASK OUTCOME.

A. Complete GAR Record.

B. Completion of this task can result in the following:

- Satisfactory inspection
- Communicate concerns/findings to the Office Manager
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

12.3.9.11. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, other job tasks, and/or additional coordination is required between the Inspector and the Office Manager.

EBOOK VOLUME 12. SURVEILLANCE

Figure 12.3.9.1. Station Facility Inspection Job Aid

EBOOK VOLUME 12. SURVEILLANCE

1. NAME OF OPERATOR	2. LOCATION			
ITEMS TO BE INSPECTED		SAT	UNSAT	NOT OBS
3. IN FACILITY				
A. Facility Staffing				
B. Personnel Proficiency				
C. Preparation of Load Manifests				
D. Organizational Effectiveness				
E. Flight Release Procedures				
F. NOTAM Summary				
G. Weather Reporting Facility				
H. Flight Planning				
I. Communications				
J. Equipment/Space.				
K. Flight Following Procedures				
4. RAMP				
A. Public Safety Ramp/Gate				
B. Airplane Loading Area				
C. Fueling				
D. Fire Protection				
E. Control Of Ramp Vehicles				
F. Cargo Loading				
G. FOD Protection				
5. IN AIRPLANE				

EBOOK VOLUME 12. SURVEILLANCE

PAGE TWO	SAT	UNSAT	NOT OBS
A. Copy of Operations Manual			
B. Copy of Operations Specifications			
C. Copy of Letter of Deviation Authority			
D. Copy of Operating Certificate			
E. Airplane Flight Manual			

6. REMARKS

7. INSPECTOR'S SIGNATURE:	DATE:
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EBOOK VOLUME 12. SURVEILLANCE

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 3. COMMON PART 121 AND 135 INSPECTIONS

Section 10. Maintenance Facility Inspection for Part 121 and 135

12.3.10.1. GACA ACTIVITY REPORT (GAR).

A. 3619 (AW)

B. 3640 (AW)

12.3.10.3. OBJECTIVE. This section provides guidance for inspecting an operator's maintenance facility for regulatory compliance with General Authority of Civil Aviation Regulation (GACAR) Part 121 and 135.

12.3.10.5. GENERAL. The maintenance inspection is performed to ensure that adequate housing, equipment, spare parts, technical data, and qualified personnel are being used to satisfactorily complete all maintenance functions.

12.3.10.7. PREPARING FOR THE INSPECTION.

A. Equipment Identification. Inspectors should be aware of the type of aircraft being operated. The operations specifications (OpSpecs) will identify the type of aircraft authorized for use.

B. Facilities. Operators may have numerous maintenance facilities spread out geographically to support their operation. Typically, an operator will have a main maintenance base, sub-maintenance base(s), and line maintenance facilities. Each maintenance facility must be evaluated for its related work activities and inspected accordingly. The performance of assigned tasks must fall within the limitations and capabilities of the facility. All operator maintenance facilities are required to perform maintenance in accordance with (IAW) the operator's maintenance manuals. The aviation safety inspector (Inspector) should use these documents to determine what special equipment, housing, and environmental conditions are necessary to perform the work.

12.3.10.9. PREREQUISITES AND COORDINATION REQUIREMENTS.

EBOOK VOLUME 12. SURVEILLANCE

A. Prerequisites:

- Knowledge of the regulatory requirements of GACAR Parts 121, and 135, as applicable
- Successful completion of the Airworthiness Inspector Indoctrination course(s) or equivalent (as directed by KSA)
- Familiarity with the type of operation being inspected

12.3.10.11. REFERENCES, FORMS, AND JOB AIDS.

A. References:

- GACAR Part 43, 119, 121, and 135
- Operator's maintenance manual (MM)
- Applicable OpSpecs

B. Forms. GAR.

B. Job Aids. None.

12.3.10.13. PROCEDURES.

A. Review the Operator's Data . Review the following:

- 1) The applicable e files to determine if any chronic or open items exist, status of non-compliance findings, exemptions, previous inspection reports, correspondence, and other documents, to determine if any areas identified require special attention.
- 2) The operator's MM to determine the level of maintenance accomplished and the complexity of operation at the maintenance facility.
- 3) The operator's OpSpecs to determine the maintenance and inspection program content and complexity.

EBOOK VOLUME 12. SURVEILLANCE

B. Inspect the Maintenance Organization. Ensure the following:

1) Staffing meets maintenance needs based on the complexity of the operation. One method to determine adequate staffing is to sample the operator's deferred maintenance programs to determine if there are excessive deferral amounts and extensions, which could lead to inadequate staffing. Another method is to review the operator's out-of-hangar performance (Mechanical Interruption Summary) to determine if low staffing results in aircraft maintenance not being accomplished in the time allotted.

2) Responsibilities are separated between inspection and maintenance sections.

C. Inspect the Inspection Department. Ensure the following:

1) Designated staffing is adequate for the complexity of the operation.

2) Delegated staffing (Required Inspection Items (RII)) is at a reasonable level.

D. Inspect the Operator's Maintenance Facilities. Using the operator's manual as a reference, inspect the following:

1) Parts and storage areas, to ensure that:

a) Parts personnel are adequately trained in the procedures pertaining to their job duties and responsibilities.

b) Adequate spare parts are available to support the complexity of the operation.

c) Receiving inspections are accomplished IAW the operator's manual.

d) Shelf life limits are established for operator-designated items, and that these items are controlled IAW the operator's manual or the manufacturer's recommendations.

e) Components and hardware are properly identified, protected, stored, and classified as to serviceability.

f) The operator can provide traceability of hardware, parts, and components subject to installation on type-certificated products.

EBOOK VOLUME 12. SURVEILLANCE

- g) Segregation of serviceable and unserviceable components and hardware is maintained.
 - h) The operator has a hazardous materials program covering areas such as recognition, packing segregation, storage, and shipping.
- 2) Special tools and test equipment, to ensure that:
- a) Serviceability and calibration is accomplished IAW the operator's manual.
 - b) All required items are serviceable and within calibration criteria, to include traceability to one of the following:
 - Standards established by the item's manufacturer
 - If foreign-manufactured, the standards of the country where manufactured
 - c) Appropriate types and quantities are available.
 - d) Proper storage and protection is used.
- 3) Fuel/oil storage and dispensing facilities, if operated and maintained by operator.
- 4) Deicing chemical storage and dispensing equipment, if applicable, to ensure:
- a) Appropriate chemical storage and dispensing.
 - b) Serviceability of equipment.
 - c) Acceptable general condition and safety of storage areas.
 - d) Appropriate identification of deicing/anti-icing fluid storage tanks, dispensing equipment, and transfer pumps and hoses.
 - e) Training of personnel in operator's deicing procedures.

NOTE: If deicing services are provided on a contract basis, ensure that the contractor meets the above requirements.

EBOOK VOLUME 12. SURVEILLANCE

- 5) Support shops (avionics, sheet metal, engine, etc.), if applicable, to ensure:
 - a) All required technical data is current and available.
 - b) Staffing reflects complexity of the shop.
 - c) Personnel are properly trained, qualified, and authorized. Training files may or may not be located at sub-maintenance facilities or line stations. When sampling training records, coordination with the facility that houses the training records may be warranted.
 - d) Procedures for shift turnover are in place and properly used.
 - e) All required special tooling and equipment is available, serviceable, and within calibration criteria.
 - f) Maintenance tasks and inspection functions are being accomplished IAW the operator's maintenance manual.
 - g) Safety equipment is available and serviceable.
 - h) Individual shop storage areas are maintained to the same standards as the main storage area.
 - i) Work areas do not conflict with each other, e.g., lathe is not next to avionics repair area.
 - j) Lighting, ventilation, and general housekeeping are adequate.

NOTE: When applying this section to line maintenance facilities, the Inspector must determine which items apply based on the complexity of the facility. Some line stations may not necessarily have a dedicated hangar.

- 6) Hangar facilities, to ensure that:

- Facilities are adequate for the work being performed
- Staffing reflects the complexity of work being performed

EBOOK VOLUME 12. SURVEILLANCE

- Personnel are properly trained, qualified, and authorized
 - Procedures for shift turnover are in place and properly used
 - Special equipment and tooling is available, serviceable, and calibrated, if applicable
 - Safety procedures are established and adhered to
 - Procedures direct the flow and control of all maintenance and inspection records
 - Lighting, ventilation, and general housekeeping are adequate
- 7) Hangar ground support equipment, to ensure the equipment is serviceable and appropriate for the work being performed.

E. Inspect the Operator's Technical Library. Ensure that all required technical data is available and current. If data is on microfiche, ensure that readers are available and serviceable. If the operator uses electronic publications, ensure that adequate procedures and controls exist for their generation and use. The data must include the following, as applicable:

- OpSpecs
- Operator's Maintenance Manual (MM)
- Aircraft manufacturers' manuals
- Propeller, appliance, engine, and emergency equipment manufacturer's manuals
- Manufacturer's and vendor's Service Bulletins (SB)/Service Letters (SL)
- Applicable GACARs
- Applicable Airworthiness Directives (AD)
- Applicable type certificate data sheets (TCDS)/Supplemental Type Certificates (STC)
- Aircraft Flight Manual (AFM)

EBOOK VOLUME 12. SURVEILLANCE

F. Inspect the Aircraft Maintenance Record System. Different operator maintenance facilities may or may not retain maintenance records at their location. Ensure the carrier has an adequate process for the transferring of maintenance records from sub-maintenance/line stations to facilities where records will be retained. If possible, sample the transfer process to ensure proper adherence to those procedures.

NOTE: Randomly sample a representative number of open and completed work packages to ensure the effectiveness of the system.

G. Inspect Aircraft. Inspect any available aircraft to determine the quality of maintenance being performed.

H. Analyze Findings. Upon completion of inspection, record all deficiencies noted and determine the appropriate corrective action(s) to be taken.

12.3.10.15. TASK OUTCOMES.

A. Complete the GAR Record.

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

- Letter to the operator confirming results of the inspection
- Compliance enforcement , as necessary

C. Document the Task. File all supporting paperwork in the operator's office file.

12.3.10.17. FUTURE ACTIVITIES. If deficiencies are noted during surveillance, schedule a follow-up inspection with the Office Manager.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 4. COCKPIT AND CABIN EN-ROUTE INSPECTION FOR PARTS 121, 125 AND 135

Section 1. Cockpit En-Route Inspection for Parts 121, 125 and 135

12.4.1.1. GACA ACTIVITY REPORT (GAR).

A. GAR 1624 (OP)

B. GAR 3629 (AW)

C. GAR 8624 (CS)

12.4.1.3. OBJECTIVE OF EN-ROUTE INSPECTIONS. The primary objective of cockpit en-route inspections is for an inspector to observe and evaluate the inflight operations of a certificate holder within the total operational environment of the air transportation system. En-route inspections are one of General Authority of Civil Aviation (GACA), Safety & Economic Regulation (S&ERs), most effective methods of accomplishing its air transportation surveillance objectives and responsibilities. These inspections provide GACA with an opportunity to assess elements of the aviation system that are both internal and external to an operator.

A. Elements of the aviation system that are internal to the operator and can be observed during en-route inspections are items such as the following:

- Crewmembers
- Operator manuals and checklists
- Use of minimum equipment lists (MEL) and Configuration Deviation Lists (CDL)
- Operational control functions (dispatch, flight following, flight locating)
- Use of checklists, approved procedures, and safe operating practices
- Crew coordination/cockpit resource management

EBOOK VOLUME 12. SURVEILLANCE

- Cabin safety
- Aircraft condition and servicing
- Training program effectiveness

B. Elements of the aviation system that are external to the operator and can be observed during en-route inspections are items such as the following:

- Airport/heliport surface area
- Ramp/gate activities
- Airport construction and condition
- Aircraft movements
- Air traffic control (ATC) and airway facilities
- ATC and airspace procedures
- Instrument approach procedures (IAP), Standard Instrument Departures (SID) and Standard Terminal Arrival Routes (STAR)
- Navigational aids
- Communications

12.4.1.5. REFERENCES, FORMS, AND JOB AIDS.

A. References:

- GACAR parts 1, 61, 91, 121, 125, and 135
- Operator's manual

B. Forms. GAR.

EBOOK VOLUME 12. SURVEILLANCE

C. Job Aids. Cockpit En-Route Inspection Job Aid (Figure 12.4.1.1).

12.4.1.7. COCKPIT EN-ROUTE INSPECTION AREAS. Inspectors should consider all inspection areas, both internal and external to the operator, to be of equal importance. Four general inspection areas have been identified for observation and evaluation by Inspectors during en-route inspections (see Figure 12.4.1.1). These inspection areas are as follows:

- Crew member
- Flight conduct
- Aerodrome/heliport
- ATC/airspace

A. The "crew member" inspection area applies to both flight crew members and cabin crew members. Inspectors should evaluate such items as crew member knowledge, ability, and proficiency by directly observing crew members performing their respective duties and functions. The applicable job aid contains a list of reminder items which should be observed in the crew member inspection area. These items are not all-inclusive but represent the types of items Inspectors should evaluate during a cockpit en-route inspection.

B. The "flight conduct" inspection area relates to 10 specific phases of flight which can be observed during an en-route inspection. The job aid contains a list of the items that should be evaluated by Inspectors during these phases of flight. These items are not all-inclusive and in some cases (such as "powerback") may not be applicable to the flight conducted. Inspectors are, however, encouraged to observe, evaluate, and report on as many of these items as possible.

NOTE: Inspectors that are unfamiliar with the operator's specific procedures for operating the aircraft should comment in their inspection reports on any item they believe should be brought to the principal operations inspector's (POI) attention. Inspectors must use good judgment concerning whether to comment on these items when debriefing crew members.

C. The "aerodrome/heliport" inspection area pertains to the various elements of aerodromes or heliports that are passed through during the flight such as runways, taxiways, ramps, and aircraft ground movements. Inspectors should observe and evaluate as many of these elements as possible during an en-route inspection.

EBOOK VOLUME 12. SURVEILLANCE

D. The "ATC/airspace" inspection area pertains to the various elements of ATC and Kingdom of Saudi Arabia (KSA) or international airspace systems. These elements should be observed and evaluated by Inspectors during en-route inspections. From an operational standpoint, these evaluations are a valuable information source which can be used not only to enhance safety with respect to ATC and the airspace system, but also to enhance the effectiveness of en-route and terminal facilities and procedures.

E. Although these four general inspection areas cover a wide range of items, they are not the only areas that can be observed and evaluated during cockpit en-route inspections. Inspectors may have the opportunity to evaluate many other areas, such as line station operations, flight control procedures, and cabin crew members in the performance of their duties. These types of inspection areas can often be observed before a flight begins, at en-route stops, or at the termination of a flight.

12.4.1.9. SPECIFIC COCKPIT EN-ROUTE INSPECTION PRACTICES AND PROCEDURES.

A. Before conducting en-route inspections, it is important that Inspectors become familiar with the operating procedures and facilities used by the operator. Inspectors can obtain such familiarization by reviewing pertinent sections of the operator's manuals and by asking questions of, and obtaining briefings from, the principal operations inspector (POI) or other Inspectors who are acquainted with the operator's procedures and facilities. The Inspector is encouraged to comment on any procedure believed to be deficient or unsafe in the inspection report. The Inspector must use good judgment, however, when debriefing crew members about procedures that may be specifically approved for that operator.

B. POIs are responsible for coordinating with their assigned operators to ensure that each operator has established procedures to be used by Inspectors for scheduling the observer's seat (jump seat). POIs must ensure that an operator's procedures allow Inspectors to have free, uninterrupted access to the jump seat. Inspectors should, however, make jump seat arrangements as far in advance as possible. Since Inspectors may have sudden changes in schedule, and may not always be able to provide the appropriate advance notice, POIs must ensure that the operator's procedures are flexible and permit use of an available jump seat on short notice.

NOTE: For GACAR Part 125 and 135 aircraft Inspectors should exercise discretion when demanding a forward observer's seat in accordance with GACAR §§ 125.453 and 135.595 in order to not unduly inconvenience or hamper the operator.

EBOOK VOLUME 12. SURVEILLANCE

C. Whenever possible, Inspectors should plan cockpit en-route inspections in a manner that will avoid disruption of operator-scheduled line checks and initial operating experience (IOE) flights. Should an Inspector arrive for a flight and find a line check or IOE in progress, the Inspector must determine whether or not it is essential that the cockpit en-route inspection be conducted on that flight. If it is essential, the operator must be so advised by the Inspector and must make the jump seat available to the Inspector. If the cockpit en-route inspection can be rescheduled and the objectives of the inspection can still be met, the Inspector should make arrangements to conduct the inspection on another flight. When a required check ride is being conducted by a check pilot from the forward jump seat and the en-route inspection is essential, the Inspector should occupy the second jump seat, if one exists. On IOE flights, the check pilot should normally occupy one of the pilot seats and the Inspector should occupy the forward jump seat. When it is essential that the en-route inspection be conducted on an aircraft that does not have two jump seats, the check pilot must occupy a pilot seat and the Inspector should occupy the jump seat. In such a case, the flight crew member not being checked must either be seated in the cabin or not accompany the flight.

D. Inspectors should begin a cockpit en-route inspection a reasonable amount of time before the flight (approximately one hour) by reporting at the operations area or at the gate, as specified by the POI. There the Inspector must first complete the necessary jump seat paperwork for inclusion in the operator's passenger manifest and mass and balance documents. The Inspector should then locate the flight crew. After the Inspector gives a personal introduction to the flight crew which includes presentation of their Aviation Safety Inspector's Credential; the Inspector must inform the pilot in command (PIC) of the intention to conduct an en-route inspection. The Inspector should then request that, at a time convenient for the flight crew, the flight crew present both their airman and medical certificates to the Inspector for examination. Also, the Inspector should request that, at a convenient time, the flight crew present flight information such as weather documents, NOTAMs, planned route of flight, dispatch or flight release documents, and other documents with information about the airworthiness of the aircraft to the Inspector for examination.

E. Sometimes an Inspector cannot meet and inform the PIC of the intention to conduct an en-route inspection before boarding the aircraft. In such a case, when boarding the aircraft, the Inspector should make appropriate introductions, present the credentials for the PIC's inspection at the earliest convenient opportunity, and inform the flight crew of an intention to conduct a cockpit inspection. In this situation a cabin crew member will usually be at the main cabin entrance door. One of the cabin crew member's primary duties is to ensure that only

EBOOK VOLUME 12. SURVEILLANCE

authorized persons enter the aircraft such as ticketed passengers, caterers, and authorized company personnel. Therefore, an Inspector should be prepared to present their credentials and any applicable jump seat paperwork to the cabin crew member as identification before entering the cockpit. When boarding the aircraft, an Inspector should also avoid unnecessarily impeding passenger flow or interrupting cabin crew members during the performance of their duties. Also, during this time an Inspector usually has ample opportunity to observe and evaluate the operator's carry-on baggage procedures and the gate agent's or cabin crew member's actions concerning oversized items. Once inside the cockpit, the Inspector should request an inspection of each flight crew member's airman and medical certificates (if not previously accomplished). When the flight crew has completed reviewing the aircraft logbooks (or equivalent documents), the Inspector should inspect the logbooks to determine the airworthiness status of the aircraft.

F. The Inspector should wear a headset during the flight. During cockpit en-route inspections, Inspectors must try to avoid diverting the attention of flight crew members performing their duties during —critical phases of flight.|| Inspectors must be alert and point out to the flight crew any apparent hazards such as conflicting traffic. If during an en-route inspection, an Inspector becomes aware of a potential violation or that the flight crew is violating a regulation or an ATC clearance, the Inspector must immediately inform the PIC of the situation.

G. Inspectors should use the Cockpit En-Route Inspection Job Aid (see Figure 12.4.1.1) while conducting these inspections. This job aid contains a list of reminder items for the specific inspection areas that should be observed and evaluated.

12.4.1.11. CONDUCT OF SPECIFIC COCKPIT EN-ROUTE INSPECTION.

A. Once situated in the cockpit, the Inspector should check the jump seat oxygen and emergency equipment (if applicable) and connect the headset to the appropriate interphone system. The pilot in command (PIC) or a designated crew member should offer to give the Inspector a safety briefing. If the PIC does not make such an offer, the Inspector should request a briefing. It is important that the Inspector monitor all radio frequencies being used by the flight crew to properly evaluate ATC procedures, flight crew compliance, transmission clarity, and radio phraseology. The monitoring of these frequencies also ensures that the Inspector does not inadvertently interfere with any flight crew communications. Inspectors should continuously monitor these frequencies to remain aware of the progress of the flight.

B. Crew Member Certificates. There have been several occasions in which pilots have operated certificate holder aircraft without having in their personal possession airman

EBOOK VOLUME 12. SURVEILLANCE

certificates and current medical certificates. In some cases, pilots have operated for long periods of time with suspended certificates. Ensure the following:

1) The PIC must have in possession the following:

- An Airline Transport Pilot certificate
- Class 1 medical certificate, which is valid for: 12 months (If under age 40 on date of issue), or 6 months (If age 40 or over on date of issue (GACAR § 61.9))
- Appropriate type rating for the aircraft being operated

2) The second in command (SIC) must have in possession the following:

- At least a Commercial Pilot Certificate and Type Rating (as applicable) in the aircraft being operated.
- Appropriate instrument rating for the aircraft being operated
- Class 1 medical certificate, which is valid for 12 months (GACAR § 61.9)

3) Flight engineers must have in their possession the following:

- Appropriate flight engineer's certificate
- Class 2 medical, which is valid for 12 months (GACAR § 61.9)

4) If the flight crew members do not have the proper, current certificates in their possession:

a) Advise the offending crew members that they will be in violation of GACAR §§ 61.3 and/or 61.5.

b) If the flight crew members still elect to operate the aircraft without having the appropriate certificates in their possession:

- Deplane
- Terminate this inspection

EBOOK VOLUME 12. SURVEILLANCE

- Immediately notify the operator's operations center

C. Load Manifests.

1) Ensure the load manifest contains the following information:

- The number of passengers
- The total mass of the loaded aircraft
- The maximum allowable takeoff mass for that flight
- The center of gravity limits
- The actual center of gravity of the loaded aircraft, unless the aircraft is loaded according to an approved loading schedule
- The registration marks of the aircraft or the flight number
- The origin and destination of the flight
- The identification of the flight crew members and their respective position assignments

2) Ensure the proper fuel load is onboard by comparing fuel gauges to the minimum fuel required for dispatch. This fuel requirement is normally found on the dispatch release.

D. Crew Member Observations. Inspectors should observe and evaluate the crew during each phase of flight. This should include an evaluation of crew member adherence to approved procedures and a proper use of all checklists. The Inspector should also observe the PIC's crew management techniques, delegation of duties, and overall conduct. All crew members must follow sterile cockpit procedures. Some of the areas that should be observed and evaluated during each flight phase are as follows:

1) *Preflight:* Inspectors should determine that the flight crew has all the necessary flight information including the appropriate weather, dispatch/flight release information; flight plan; NOTAMs; and mass and balance information. MEL items should be resolved in accordance with the operator's MEL and appropriate maintenance procedures. Inspectors

EBOOK VOLUME 12. SURVEILLANCE

should observe the flight crew performing appropriate exterior and interior preflight duties in accordance with the operator's procedures.

2) *Pre-Departure*: Inspectors should observe the flight crew accomplishing all pre-departure checklists, takeoff performance calculations, and required ATC communications. The flight crew should use coordinated communications (via hand signals or the aircraft interphone) with ground personnel. Often pushback or powerback clearance must be obtained from the appropriate ATC or ramp control facility. When mass and balance information is transmitted to the aircraft by company radio during the outbound taxi, the flight crew should follow the operator's procedures as to which crew member receives the information and completes the final takeoff performance calculations and which crew member monitors the ATC frequency. The Inspector should observe the following:

- Accomplishment of checklists during taxi
- Adherence to taxi clearances
- Control of taxi speed
- Compliance with hold lines
- Flight crew conduct of a pre-takeoff briefing in accordance with the operator's procedures

3) *Takeoff*: The takeoff procedure should be accomplished as outlined in the operator's approved maneuvers and procedures document. Inspectors should observe and evaluate the following items or activities during the takeoff phase:

- Aircraft centerline alignment
- Use of crosswind control techniques
- Application of power to all engines
- Takeoff power settings
- Flight crew call outs and coordination

EBOOK VOLUME 12. SURVEILLANCE

- Adherence to appropriate takeoff or V speeds
- Rate and degree of initial rotation
- Use of flight director, autopilot, and autothrottles
- Gear and flap retraction schedules and limiting airspeeds
- Compliance with the ATC departure clearance or with the appropriate published departure procedures

4) *Climb*: The climb procedure should be conducted according to the outline in the operator's approved maneuvers and procedures document. Inspectors should observe and evaluate the following items and activities during the climb phase of flight:

- Climb profile/area departure
- Airspeed control
- Navigational tracking/heading control
- Powerplant control
- Use of radar, if applicable
- Use of autoflight systems
- Pressurization procedures, if applicable
- Sterile cockpit procedures
- Vigilance
- Compliance with ATC clearances and instructions
- After takeoff checklist

5) *Cruise*: Procedures used during cruise flight should conform to the operator's

EBOOK VOLUME 12. SURVEILLANCE

procedures. Inspectors should observe and evaluate the following areas during the cruise phase of flight:

- Cruise Mach/airspeed control
- Navigational tracking/heading control
- Use of radar, if applicable
- Use of turbulence procedures, if applicable
- Monitoring fuel used compared to fuel planning
- Awareness of Mach buffet and maximum performance ceilings
- Coordination with cabin crew
- Compliance with oxygen requirements, if applicable
- Vigilance
- Compliance with ATC clearances and instructions

6) *Descent*: Procedures used during descents should conform to the operator's procedures. Inspectors should observe and evaluate the following areas during the descent phase of flight:

- Descent planning
- Crossing restriction requirements
- Navigational tracking/heading control
- Use of radar, if applicable
- Awareness of VMO/MMO speeds and other speed restrictions
- Compliance with ATC clearance and instructions

EBOOK VOLUME 12. SURVEILLANCE

- Use of autoflight systems
- Pressurization control, if applicable
- Area/situational awareness
- Altimeter settings
- Briefings, as appropriate
- Coordination with cabin crew
- Sterile cockpit procedures
- Completion of appropriate checklist
- Vigilance

7) *Approach:* Procedures used during the selected approach (instrument or visual) should be accomplished as outlined in the operator's maneuvers and procedures document. Inspectors should observe and evaluate the following areas during the approach phase of flight:

- Approach checklists
- Approach briefings, as appropriate
- Compliance with ATC clearances and instructions
- Navigational tracking/heading and pitch control
- Airspeed control, VREF speeds
- Flap and gear configuration schedule
- Use of flight director, autopilot, autothrottles
- Compliance with approach procedure

EBOOK VOLUME 12. SURVEILLANCE

- Sink rates
- Stabilized approach in the full landing configuration
- Flight crew call outs and coordination
- Transition to visual segment, if applicable

8) *Landing:* Procedures used during the landing maneuver should conform to those outlined in the operator's maneuvers and procedures document. Inspectors should observe and evaluate the following areas during the landing phase of flight:

- Before landing checklist
- Threshold crossing height (TCH)
- Aircraft centerline alignment
- Use of crosswind control techniques
- Sink rates to touchdown
- Engine spool up considerations
- Touchdown and rollout
- Thrust reversing and speedbrake procedures
- Use of autobrakes, if applicable
- Braking techniques
- Diverting attention inside the cockpit while still on the runway
- After landing checklist

9) *Pre-Arrival:* Pre-Arrival and parking procedures should conform to the operator's procedures as outlined in the appropriate manual. Inspectors should evaluate crew

EBOOK VOLUME 12. SURVEILLANCE

accomplishment of after landing checklists, ground crew parking, and passenger deplaning procedures.

10) *Arrival:* Inspectors should observe and evaluate the flight crew as they complete postflight duties such as postflight checks, aircraft logbook entries, and flight trip paperwork completion and disposition.

E. During the en-route inspection, Inspectors should observe and evaluate other inspection areas, such as ATC and airspace procedures and aerodromes or heliports the flight transits during the cockpit en-route inspection.

1) When evaluating aerodromes or heliports, Inspectors should observe the condition of surface areas, such as ramp and gate areas, runways, and taxiways. The following list contains other areas which may be observed and evaluated by Inspectors during cockpit en-route inspections:

- Taxiway signs, markers, sterile areas, and hold lines
- Ramp vehicles, equipment, movement control
- Aircraft servicing, parking, and taxi operations
- Obstructions, construction, and surface contaminants (such as ice, slush, snow, fuel spills, rubber deposits)
- Security and public safety

2) During cockpit en-route inspections, Inspectors have the opportunity to observe and evaluate ATC operations and airspace procedures from the vantage point of the aircraft cockpit. Inspectors may observe and evaluate the following areas from the cockpit:

- Radio frequency congestion, overlap, or blackout areas
- Controller phraseology, clarity, and transmission rate
- Automated terminal information service (ATIS)
- Use of full call signs

EBOOK VOLUME 12. SURVEILLANCE

- Clearance deliveries
- Acceptable and safe clearances
- Aircraft separation standards
- Acceptability of instrument approach procedures, departure procedures, and arrival procedures

F. After the flight has been terminated, the Inspector must debrief the crew on any discrepancies observed and on any corrective actions that should be taken. If the Inspector observed a violation during the flight and intends to recommend enforcement action or intends to make critical comments concerning the crew's performance, the Inspector must inform the flight crew during the debriefing.

12.4.1.13. AIRCRAFT AIRWORTHINESS PORTION OF THE COCKPIT EN-ROUTE INSPECTION.

A. General Guidance. Open discrepancies or improperly deferred minimum equipment list (MEL) items have been discovered in maintenance records just prior to departure. The resulting corrective actions have resulted in lengthy delays.

- 1) Regulations require that maintenance be recorded when performed. Procedures for ensuring that these recording requirements are met are described in the operator's maintenance procedures manual.
- 2) The manual contains specific instructions on when an airworthiness release or record entry is required. All discrepancies entered in the record must either be corrected or deferred using the methods identified in the operator's maintenance procedures manual. The Inspector must become familiar with the operator's maintenance record handling procedures.

B. Inspect the Aircraft Maintenance Record.

NOTE: Notify the appropriate operator personnel immediately of any discrepancies noted during this inspection.

EBOOK VOLUME 12. SURVEILLANCE

1) Ensure the following:

- Airworthiness releases are current
- No open items exist
- All discrepancies are corrected or properly deferred
- MEL items were deferred per the procedural and placarding requirements of the operator's approved program

2) Ensure the length of deferrals is not exceeded, by reviewing the following:

- Maintenance record pages
- Deferred maintenance list
- Deferred maintenance placards/stickers

3) Ensure that the maintenance records contain the following for each discrepancy:

- A description of work performed or reference to acceptable data
- The name of the person performing the work if outside the organization
- The name or other positive identification of the person approving the work

4) Determine if repetitive problems indicate a trend.

NOTE: If actions taken by the operator do not comply with regulatory requirements or the operator's manual, terminate the inspection. Advise the operator of the noncompliance and the possibility of enforcement action and commence compliance enforcement in accordance with Volume 13.

C. Interior Inspection. This inspection should be performed without disturbing the loading and/or unloading of the passengers. Any discrepancies noted should be brought immediately to the attention of the flight crew. Perform the interior inspection per the guidance in Figure 12.2.1.2, Interior Inspection Guidelines, found in Volume 12, Chapter 2, Section 1.

EBOOK VOLUME 12. SURVEILLANCE

D. Exterior Inspection. The Inspector should accompany a crew member on the exterior walk around to determine the thoroughness of the crew member's inspection. It is important to be aware of the type of maintenance and servicing activities being accomplished. Perform the exterior inspection per the guidance in Figure 12.2.1.3, Exterior Inspection Guidelines, found in Volume 12, Chapter 2, Section 1.

E. In-Flight Monitoring.

- 1) This phase of the inspection provides the opportunity to monitor aircraft systems and evaluate the effectiveness of maintenance performed to correct maintenance record discrepancies.
- 2) Inspectors have different degrees of pilot skills, and the airworthiness Inspector performing an en-route inspection is not there to evaluate the competency of the flight crew. However, if obvious discrepancies are noted, such as a deviation from assigned altitude or other operational procedure, they must be brought to the attention of the pilot in command and the POI.
- 3) While conducting an en-route inspection, do not manipulate, operate, select, or deselect any switches, circuit breakers, or controls.

12.4.1.15. CARGO/COMBINATION CONFIGURED AIRCRAFT.

A. Inspection results have disclosed instances of significant aircraft structural damage resulting from the careless loading of cargo, such as:

- Torn or punctured liners indicating hidden damage to circumferential stringers, fuselage skin, and bulkheads
- Damaged rollers, ball mats, etc. causing significant structural damage to the floors
- Severe corrosion, fire, and structural damage resulting from the improper handling of some hazardous materials

B. The surveillance of dangerous goods handling is not the primary function of the cockpit en-route inspection. If discrepancies are noted in the handling of dangerous goods, contact the POI for further direction (see Volume 4, Chapter 31 for additional guidance).

EBOOK VOLUME 12. SURVEILLANCE

12.4.1.17. DEFERRED MAINTENANCE.

A. MEL Deferred Maintenance. The operator's approved MEL allows the operator to continue a flight or series of flights with certain inoperative equipment. The continued operation must meet the requirements of the MEL deferral classification and the requirements for the equipment loss.

B. Other Deferred Maintenance.

1) Operators frequently use a system to monitor items that have previously been inspected and found to be within serviceable limits. These items are still airworthy, yet warrant repair at a later time or when items no longer meet serviceable limits. This method of deferral may require repetitive inspections to ensure the continuing airworthiness of the items. Examples of items that are commonly deferred in this manner are fuel leak classifications, dent limitations, and temporary (airworthy) repairs.

2) Passenger convenience item (not safety/airworthiness related) deferrals should be handled according to the operator's NEF program guidelines.

C. The operator's approved maintenance program must provide for the prompt and orderly repairs of inoperative items.

12.4.1.19. INSPECTOR BAGGAGE. The Inspector must conform to the operator's approved carry on baggage program. If there is any concern that the baggage will exceed operator limitations it should be checked. The Inspector's credential is adequate documentation for the operator to check the baggage.

12.4.1.21. TASK OUTCOMES.

A. Complete GAR Record

B. Completion of this task can result in the following:

- Satisfactory inspection
- Communicate concerns/findings to and the applicable supervisor
- Follow-up inspection for a particular discrepancy

EBOOK VOLUME 12. SURVEILLANCE

- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

12.4.1.23. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, other job tasks, and/or additional coordination is required between the Inspector and the applicable supervisor.

EBOOK VOLUME 12. SURVEILLANCE

Figure 12.4.1.1. Cockpit En-Route Inspection Job Aid

GAR ACTIVITY: 1624	OPERATOR	FLT NO.	HZ #	M/M/S:	
PIC NAME:	CERT #	BASE	FROM	TO	RESULTS:
U = UNACCEPTABLE; P = POTENTIAL; I = INFORMATION, E = EXCEEDS					
CREW MEMBERS	CRUISE				PASSENGER HANDLING
KNOWLEDGE	* Speed Control				ACFT DISCREPANCIES
ABILITY/PROFICIENCE	* Navigation				MASS & BALANCE
QUAL/CURRENCY	* Procedures				OPERATIONS SPECIFICATIONS
CERT/RATINGS	* Hi/Lo Buffet				DANGEROUS GOODS
BRIEFINGS	* Oxygen Requirement's				OTHER REMARKS
MANUAL CURRENCY	* Fuel Mgt.				AERODROMES/HELIPORTS
MANUAL AVAILABILITY	DESCENT				SECURITY
CREW COMPLEMENT	* Planning				PUBLIC SAFETY
CREW COORDINATION	* Speed Control				RUNWAYS
PREPARATION	* Navigation				TAXIWAYS
REQ. EQUIPMENT	* Pressurization				RAMP/GATE AREA
OTHER REMARKS	* Altitude Calls				STERILE AREA
FLIGHT CONDUCT	STAR				MARKINGS
	APPROACH				SIGNS
PREFLIGHT	* Speed Control				VEHICLES/EQUIPMENT
* Flight Plan	* Gear/Flap speed				OBSTRUCTIONS
* Weather	* Stabilized				CONSTRUCTION
* NOTAMS	* Procedures				CONTAMINATION/FOD
* Aircraft Inspection	IAP				LIGHTING
* T/O Data	* LANDING/TAXI				APPROACH AIDS
* Load Info	* Runway Alignment				NAVIGATIONAL AIDS
* Dispatch/Flight Release/Flight locating	* X-Wind Control				SNOW & ICE CONTROL
* Cockpit Setup	* Speed control				OTHR REMARKS
PREDEPARTURE	* Sink Rate				ATC/AIRSPACE
* Ground Crew	* Touchdown/Rollout				* ATC/CLEARANCE
* Pushback	* Reverser/Speed Brake				* Clearance Del
* Engine Start	* Braking				* Term Facility
TAXI/TAKEOFF	* Parking				* En-route Facility
* Powerback	VIGILANCE				* Controller Instructions
* Taxi Speed	MARSHALLING				ATIS
* Procedures	OTHER REMARKS				SID's/STAR's
* Runway Alignment	CONFORMANCE				IAP's
* X-Wind Control	REGULATIONS				PROCEDURES
* Power Applied	PROCEDURES				*
* Power Setting	* Altitude Call-out				* Radar Vectors
* Call-outs	* Use of Radar				OTHER REMARKS:
* T/O Speeds	CREW COMPLEMENT				
* Rotation	USE OF CHECKLIST				
* Gear/Flap Speeds	USE OF MEL/CDL				
SID	STERILE COCKPIT				
* Area Departure	A/C LIMITATIONS				
CLIMB	CARRY-ON BAGS				
* Heading/Speed Control	CABIN SAFETY				
* Power Settings	COMPANY DIRECTIVES				
* Procedures	ATC CLEARANCES				

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 4. COCKPIT AND CABIN EN-ROUTE INSPECTION FOR PARTS 121, 125 AND 135

Section 2. Over-Water En-Route Inspection for Part 121 and 135

12.4.2.1. GACA ACTIVITY REPORT (GAR).

- A. 1624 (OP)
- B. 3629 (AW)
- C. 8624 (CS)

12.4.2.3. GENERAL. This section contains information, direction, and guidance to be used by aviation safety inspectors (Inspectors) when conducting over-water en-route inspections. This section contains background information on the general navigational principles with which the operator and flight crews must comply, definitions of relevant terminology, and specific guidance to be used by Inspectors when observing flight crews as they conduct over-water operations. Inspectors should refer to Section 1 above for information and guidance related to cockpit en-route inspections.

12.4.2.5. FLIGHT PLANNING. One copy of the flight plan should be designated as the “master” flight plan. All information related to navigation of the flight must be recorded on this document. When evaluating this area, Inspectors should use the following guidance:

A. Computerized Flight Plans. Even though most operators use computerized flight plans, all flight plans must still be carefully checked to ensure accuracy. The routing on flight plans must be cross-checked against navigational charts and track messages. Flight plans must also be legible.

B. Waypoint Numbering. After a flight plan is checked, the waypoints should be numbered. Many automatic navigation systems can accept only nine waypoints. Waypoints may be numbered sequentially initially starting with 1 and going up to 9; then the tenth waypoint can be numbered 1, the eleventh 2, and so on. Other navigation systems, such as flight management systems (FMS), can accept 100 or more waypoints. In such cases it is acceptable for waypoints

EBOOK VOLUME 12. SURVEILLANCE

to be numbered progressively. When more than one type of navigational device is in use (for example INS and FMS), the waypoints must be numbered so that they correspond to both devices. In this example, one acceptable practice is to number the first nine waypoints in the FMS as 11 through 19, and the second set of waypoints as 21 through 29, and so on.

C. Plotting Chart. The planned route must be drawn on a plotting chart of appropriate scale (1 inch to 120 nautical miles). All waypoints on the plotting chart must be cross-checked against the master flight plan.

D. NOTAMs and PIREPs. Current Notices to Airmen (NOTAMs) must be available and checked to ensure that any required stations are in service for. Pilot reports (PIREPs) must also be checked to ensure that the actual winds are the same as the winds in the forecast.

12.4.2.7. COCKPIT SET-UP. Cockpit set-up begins with the crew members turning the navigation computers on according to the flight manual procedures. Inspectors should observe crew members during cockpit set-up and be aware of the following:

A. Software and Modification Status. Before loading the initial present position and waypoints, crew members should verify that the procedures they are using are compatible with the software loaded in the computer. Flight management systems (FMS) data bank dates should be checked to ensure that they are current.

B. Present Position and Waypoint Entry. One crew member should find and enter the initial present position into the navigation computers. A record of this action must be made on the master flight plan. An acceptable method of making this record is for the crew member to copy the coordinates displayed after the entry sequence and mark them “initial present position.” An acceptable method for recording waypoint entry is to circle the waypoint on the master flight plan.

C. Cross-Checking Initial Set-Up. A second crew member must independently find the initial present position and verify that all of the navigation computers are correctly programmed. The second crew member must then verify the accuracy of each waypoint as follows:

- 1) Verification must be recorded by the crew member on the master flight plan. An acceptable means of recording verification is for the crew member to draw a diagonal line through the initial present position and each waypoint as it is checked.

EBOOK VOLUME 12. SURVEILLANCE

2) When the remote feature is used, the crew member must independently check the present position and waypoints in each computer. It is possible for data to be lost during the transfer since the remote computer may not have received the same data that was transmitted.

D. ZD Check. After the waypoints have been entered and verified by the crew member, the crew member must compare the track bearing and zone distance (ZD) shown by the computer with that shown in the flight plan. A track bearing or distance that varies by more than +2 should be investigated.

E. Pre-takeoff Checks. Some manufacturers of navigation equipment recommend the completion of preflight navigation checks. For example, a manufacturer may recommend that after the crew member places the “NAV Mode” selector switch to “NAV” on an Inertial Navigation Set (INS), and before moving the aircraft, the crew member should check the ground speed. Any indication of more than a few knots may indicate a bad system. Current present position and ground speeds should be cross-checked to confirm correct operation. Inspectors should observe flight crew members making the checks required by the operator’s procedures.

12.4.2.9. GATEWAY PROCEDURES. Flights must not proceed beyond the gateway unless the correct functioning of the navigation computers can be verified. Inspectors should observe the flight crew performing gateway checks and should ensure that flight crew members are following the operator’s procedures. A typical set of operator procedures with some guidance for Inspectors evaluating such procedures follows:

A. After crossing the gateway, a crew member should record the time and present position of each navigation computer. Preferably, the crew member should use the hold feature on the computer to freeze the present position display. This position must be compared to the known position of the gateway and to the deviation of each computer established. This gateway check detects errors that may have accrued in position information, and it also provides an opportunity for updating if required, as well as establishing, the most accurate computer.

B. Usually, the time and distance to the next waypoint is displayed on the computer that is supplying steering signals. This computer may be set up to use triple mixing, if this feature is available. A second computer should be set to display cross-track (XTK) and track angle error (TKE). The operator’s procedures for triple mixing should be in accordance with the manufacturer’s recommendations.

C. A crew member should record the actual winds for the purpose of comparing them with

EBOOK VOLUME 12. SURVEILLANCE

preflight planning and to use them in case the flight must reverse course.

12.4.2.11. WAYPOINT CHANGEOVER PROCEDURES. When conducting an over-water en-route inspection, Inspectors should ensure that an operator's waypoint changeover procedures include the following:

A. Inbound. When approaching a waypoint, a crew member should cross-check the coordinates of the subsequent waypoint against the flight plan.

B. Outbound. After passing a waypoint, a crew member should confirm that each computer has switched to the next leg and that the aircraft is tracking along the desired track. Waypoint passage must be recorded by a crew member on the master flight plan. One acceptable means of doing this is for the crew member to place a second diagonal line through the circle surrounding the waypoint number. The crew member must record both the time that the waypoint was passed and the fuel on board, as well as compute an estimated time of arrival (ETA) at the next waypoint for ATC reporting.

C. Course Plot. Plotting procedures reduce course deviation incidents and should be used by crew members when navigation is done solely by long-range navigation computers.

Approximately 10 minutes after passing each waypoint, a crew member should record the present position and then place that position on the plotting chart. This plotted position should fall on the track line.

12.4.2.13. AFTER ARRIVAL PROCEDURES. Inspectors should ensure that, after arrival, a crew member determines the distance from the actual position to the present position displayed on each computer. Crew members should record these observations in accordance with the operator's procedures.

12.4.2.15. NAVIGATION CONTINGENCY PROCEDURES. Inspectors must ensure that an operator's training programs, manuals, and check pilot programs contain procedures for partial and total navigation systems failure. Specific procedures depend upon the type of equipment being used and the area in which operations are being conducted. Inspectors must be aware that the improper application of these procedures can result in a collision with another aircraft. Inherent in these procedures is the requirement that the crew members contact ATC whenever the flight is unable to continue according to the current ATC clearance. This includes situations in which the aircraft is off course or is unable to maintain assigned altitude. The flight crew's command of this information must allow for an immediate application in an emergency. The crew member should have knowledge of the

EBOOK VOLUME 12. SURVEILLANCE

first actions to take without having to reference flight information documents. Flight crews must be knowledgeable of where these procedures are published and must be able to locate them expeditiously when needed.

12.4.2.17. AIRCRAFT PERFORMANCE. Inspectors should be aware of the one-engine and two-engine inoperative performance requirements for extended over-water operations. When conducting an extended over-water inspection, Inspectors should evaluate the operator's methods of complying with these rules and the flight crew's knowledge of these procedures. Inspectors should also take into account the guidance that follows when evaluating engine failure procedures.

A. ETPs. Operators often use Equal Time point (ETP) computations to show compliance with engine-out performance requirements. When evaluating this area, Inspectors should consider the following:

- 1) *Proficiency.* Flight crew members are often assigned the responsibility for computing ETPs, and must be proficient in making them. Whether or not flight crew members perform the calculations, they must be familiar with the conditions for them as well as the meaning of these calculations.
- 2) *Use of Alternate Aerodromes.* Operators may use en-route alternate aerodromes and compute multiple ETPs to show compliance with engine-out performance rules. To do so, each alternate aerodrome must be listed on the release. Flight crews must be knowledgeable in the procedures they must follow should an engine fail.

B. Fuel Dumping and Driftdown. Engine failure procedures normally require driftdown, fuel dumping, or both. Flight crews must be aware of how to make these determinations. Often, aircraft mass and altitude information is presented in tabular format; therefore, flight crews must be competent in interpreting these presentations.

12.4.2.19. DISPATCH RELEASE RULES. Inspectors should be thoroughly familiar with the rules for dispatching flights in an extended over-water operation (see Volume 4, Chapter 25, Operational Control of Air Operators for a discussion of these rules). Inspectors should ensure that operators and flight crews comply with these rules, which include the following:

A. Weather Minimums. Inspectors should ensure that the flight crews are thoroughly familiar with the minimum weather requirements for destination and alternate aerodromes. Flight crews should be aware of the required procedures to follow when the weather at a destination or

EBOOK VOLUME 12. SURVEILLANCE

alternate aerodrome goes below the minimums while the flight is en-route.

B. Special Operations. Since the operations specifications (OpSpecs) contain several restrictions on special operations, Inspectors should pay particular attention to operations using planned re-dispatch operations under OpSpec B44.

12.4.2.21. TASK OUTCOME.

A. Complete the GAR.

B. Completion of this task can result in the following:

- Satisfactory inspection
- Communicate concerns/findings to the applicable supervisor
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified safety Deficiencies

12.4.2.23. FUTURE ACTIVITIES.

Based on inspection findings, determine if increased surveillance, additional enforcement, other job tasks, and/or additional coordination is required between the Inspector and the applicable supervisor.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 4. COCKPIT AND CABIN EN-ROUTE INSPECTION FOR PARTS 121, 125 AND 135

Section 3. Cabin En-Route Inspection for Part 121 and 125

12.4.3.1. GACA ACTIVITY REPORT (GAR).

- A. 1625 (OP)
- B. 3630 (AW)
- C. 8625 (CS)

12.4.3.3. OBJECTIVE. This section provides guidance for conducting a cabin en-route inspection to ensure that an operator's cabin safety procedures adhere to the General Authority of Civil Aviation Regulations (GACARs) and safe operating practices.

NOTE: For purposes of this section, aviation safety Inspector (Inspectors) includes cabin safety inspectors (CSI).

12.4.3.5. GENERAL. Cabin en-route inspections provide the General Authority of Civil Aviation (GACA) with information concerning cabin crew member (CCM) training programs, operator procedures, and the condition and maintenance of aircraft emergency equipment and furnishings.

A. Inspector Qualifications.

- 1) Since Inspectors do not receive system training on all aircraft, it is important that they become familiar with the operator's procedures and equipment before performing the inspection.
- 2) The GACA does not permit an Inspector to provide on-the-job training (OJT) to another Inspector concerning the conduct of en-route inspections on the same flight. Therefore, each Inspector must be familiar with the cabin en-route inspection procedures before performing this task and must be authorized through his applicable supervisor.

EBOOK VOLUME 12. SURVEILLANCE

3) Inspectors possess various degrees and types of expertise and experience. When additional information or guidance is needed, the Inspector should coordinate with personnel experienced in that particular specialty.

B. Inspector Conduct.

1) In performing this job task, the actions of the Inspectors are subject to the close scrutiny of airline employees and the general flying public. The Inspector must be alert for leading questions from crew members and passengers regarding destinations, technical information, and other operators.

2) Inspectors involved in cabin en-route inspections will not enter the cockpit during the flight, unless requested by the captain or another crew member, or unless emergency circumstances indicate that it would be the proper course of action.

NOTE: Inspectors must comply with all regulatory requirements and approved operator procedures.

12.4.3.7. CABIN EN-ROUTE INSPECTION AREAS. Three general areas have been identified for Inspectors to observe and evaluate during cabin en-route inspections. Each area should be considered to be of equal importance. The three inspection areas are as follows:

A. Cabin (Interior). The interior inspection area applies to the airworthiness of the aircraft cabin and the condition and availability of aircraft cabin emergency equipment and furnishings. Figure 12.4.3.2, Cabin En-Route Interior Inspection Reference Chart, lists these items and when they should be inspected. Although these items are not all inclusive, they represent the types of aircraft items that should be evaluated during the inspection.

B. Crew Member. The crew member inspection area applies to CCMs who perform assigned safety duties during the flight. Inspectors should evaluate such items as crew member knowledge, ability, and proficiency by directly observing CCMs performing their assigned safety duties and functions.

NOTE: CCM trainees who are receiving operating experience should not be evaluated on the same basis as the fully qualified crew members.

C. Flight Conduct. The flight conduct inspection area relates to the specific phases of the flight

EBOOK VOLUME 12. SURVEILLANCE

that can be observed during the cabin en-route inspection. This includes a wide range of items, including CCM and flight crew member coordination of the performance of duties. These types of areas can often be observed before beginning a flight, at en-route stops, or at the termination of a flight.

12.4.3.9. INITIATION AND PLANNING.

A. Initiation. This task is normally scheduled as part of the annual surveillance program. Additional inspections may be initiated by the GACA management.

B. Planning.

1) Inspectors conducting cabin en-route inspections should make arrangements for the inspection as far in advance of the flight as possible. Inspectors who have not provided the operator with the appropriate advance notice should not insist on a seat if the flight is full. However, displacing a revenue passenger should only be done when there is no acceptable, alternative means of accomplishing the inspection. Inspectors are expected to exercise sound judgment in these matters.

NOTE: Inspectors will not occupy the CCM jump seats. Only qualified crew members, as determined by the operator, are authorized to occupy these seats.

2) When it is necessary to board a flight at an intermediate stop, the Inspector will make every effort to advise the pilot in command (PIC), before boarding the flight, that a cabin en-route inspection will be conducted.

3) The Inspector must conform to the operator's approved carry-on baggage program. If there is any concern that the Inspector's carry-on baggage will exceed operator limitations, the baggage should be checked.

12.4.3.11. PERFORMING THE CABIN EN-ROUTE INSPECTION. The attention of the cabin crew members must not be diverted from assigned duties including passenger boarding, deplaning, and in flight service. Surveillance of CCM awareness and the following of safety related procedures should continue during the flight.

A. Interior Inspection.

EBOOK VOLUME 12. SURVEILLANCE

- 1) This inspection should be performed without disturbing the boarding or deplaning of the passengers. Any discrepancies noted should be brought immediately to the attention of the lead CCM or the PIC.
- 2) Crew members should initially be briefed to continue their assigned duties as if the Inspector were not present. The Inspector should then request that a crew member provide an CCM manual and be available for a discussion relating to the crew member's duties, at the crew member's earliest convenience.
- 3) Some operators require CCM's to accomplish a preflight inspection of at least some of the emergency and safety equipment in the cabin. In such a case, the Inspector should observe the CCM inspecting the equipment and then perform an additional inspection of selected equipment.

NOTE: An Inspector can determine whether the operator requires a CCM to conduct preflight by examining the CCM manual.

- 4) When a CCM preflight equipment inspection is not required by the operator or has already been performed, the Inspector should inspect the equipment. If there is not enough time to inspect the emergency equipment before the flight, the Inspector may choose to inspect it after the flight.
- 5) Inspectors should avoid impeding the flow of passenger traffic or in any way interfering with crew members conducting their respective duties. Since passengers are naturally curious about an Inspector's activities, it is recommended that reasonable passenger inquiries be answered in a brief, factual, and courteous manner.

B. In-Flight Monitoring. This phase of the inspection includes the activities associated with boarding, pre-departure, in-flight, and landing. During this part of the inspection, the Inspector will have the opportunity to do the following:

- Evaluate operator procedures
- Determine adherence to company policy, GACA regulations, and safe operating practices
- Monitor passenger safety

EBOOK VOLUME 12. SURVEILLANCE

C. Required Cabin Crew Members. When regulations require CCM's for the operation of a flight, the number of CCM's required is based on the number of passenger seats and/or the emergency evacuation demonstration. The number of required CCM's for each make, model and series aircraft used by the operator is listed in the operations specifications (OpSpecs).

- 1) There must always be a full complement of CCMs at originating and terminating points when passengers are on board. At intermediate stops, operators may reduce the number of required CCMs by dividing the number of CCMs by two and rounding down. Regulations permit an operator to substitute personnel, qualified in emergency evacuation procedures for that specific aircraft, at intermediate stops. Substitute personnel must be easily identified.
- 2) Additional, non-required CCMs may be used by the operator.

12.4.3.13. DEFERRED MAINTENANCE.

A. Minimum Equipment List (MEL), Deferred Maintenance. The operator's approved MEL allows the operator to continue a flight or series of flights with certain inoperative equipment. The continued operation must meet the requirements of the MEL deferral classification and the requirements for the equipment loss.

B. Other Deferred Maintenance.

- 1) Operators frequently use a system to monitor items that have previously been inspected and found to be within serviceable limits. These items are still airworthy yet warrant repair at a later time or when items no longer meet serviceable limits. This method of deferral may require repetitive inspections to ensure the continuing airworthiness of the items. Examples of items that are commonly deferred in this manner are overhead storage bins, seatbelts, and interim airworthy repairs.
- 2) Passenger convenience item deferrals that are not safety- or airworthiness-related should be handled per the guidelines of the operator's program. This may include a cabin log.

12.4.3.15. COORDINATION REQUIREMENTS. This task may require coordination with the principal Inspectors (PIs) assigned to the operator.

12.4.3.17. REFERENCES, FORMS, AND JOB AIDS.

EBOOK VOLUME 12. SURVEILLANCE

A. References.

- FAA Advisory Circular 121-24 (as amended), Passenger Safety Information and Briefing Cards.
- Operator's manual(s)

B. Forms. GAR.

C. Job Aids.

- Figure 12.4.3.1, Cabin En-Route Inspection Job Aid
- Figure 12.4.3.2, Cabin En-Route Interior Inspection Reference Chart

12.4.3.19. PROCEDURES.

A. Initiate the Cabin En-Route Inspection. The Inspector should initiate the cabin en-route inspection according to the yearly surveillance plan.

B. Prior to the Inspection. Prior to the inspection the Inspector should contact the operator to reserve the cockpit jump seat.

C. Coordinate With the Operator. The Inspector should coordinate with the operator at least one hour prior to the flight. While coordinating, the Inspector should do the following:

- 1) Identify himself to the operator representative, and state that he is performing a cabin en-route inspection on a specific flight.
- 2) Present official Aviation Safety Inspector Credentials.
- 3) Obtain applicable operator boarding authorization per the airline procedures.
- 4) Request access to the aircraft as soon as practical (for example, after passengers have deplaned) to meet the flight and cabin crews and perform the interior pre-departure inspection, as time permits.
- 5) If aircraft access is denied, the following steps should be taken by the Inspector:

EBOOK VOLUME 12. SURVEILLANCE

- Apprise the operator representative of the regulation authorizing Inspector access to aircraft
- Request to see the appropriate supervisor if the representative still refuses access
- Make it very clear to the operator that the denial of access contradicts regulations and that enforcement action may be initiated
- Report the occurrence to the immediate supervisor upon return to the office, if access was not granted

D. Coordinate With the Crew. Before boarding the aircraft or performing any inspection, the Inspector should coordinate with the crew as follows:

- Identify himself to the captain and to the lead CCM as a GACA Aviation Safety Inspector
- State the purpose of the inspection

E. Perform the Interior Inspection. The Inspector should inspect the following, as applicable:

1) Cabin placarding, markings, and signs (for example, exits, “no smoking” signs, and emergency equipment), to ensure marking legibility and the correct location.

2) Fire extinguishers for the following:

- To verify the quantity and location
- To ensure that they are properly serviced, tagged, and stowed

3) Portable oxygen bottles for the following:

- To verify the quantity and location
- To ensure that they are properly serviced, tagged, and stowed
- To determine the condition of the mask, tubing, and connectors

NOTE: There is no requirement that the mask/hose must be connected to the first aid

EBOOK VOLUME 12. SURVEILLANCE

oxygen bottles.

4) Protective breathing equipment (PBE) for correct location, proper number of units, and proper stowage.

5) First aid kits and emergency medical kits for correct number, location, and stowage.

NOTE: GACA requires first aid and medical kits to be sealed at dispatch. When items are used en-route, the kits are resealed with a color coded seal (or equivalent methods) indicating that restocking and resealing are required.

6) Megaphones for correct number, location, general condition, and proper stowage.

7) Overwater equipment as applicable.

8) Passenger briefing cards, to ensure the following:

- That they are available for each passenger
- That they are appropriate to the aircraft
- That they contain the required information, to include the following:

o Emergency exit location and operation

o Slide use and location

o Oxygen use

o Safety belt use

o Flotation device use and location

o Appropriate pictorials for extended overwater operations, including ditching exits, life preservers, and life raft or slide raft in flight location

o Exit seating information

EBOOK VOLUME 12. SURVEILLANCE

9) Passenger seats, to ensure the following:

- That a reclined seat does not block emergency exits
- That the seat cushions are intact
- That the tray table latching mechanisms are operable
- That the self-contained and removable ashtrays are in serviceable condition and are available when smoking is authorized
- That each seat has a complete restraint system
- That seatbelts are operational and not frayed or twisted

10) Passenger oxygen service units to ensure that they are closed and latched, without any extended red service indicators or pins.

11) CCM station, to ensure the following:

- That the seat retraction/restraint system is operational and is properly secured
- That the seatbelts are operational and not frayed or twisted
- That the seat cushions are intact
- That the seat headrest is in the correct position
- That the public address (PA) system and interphone are operable
- That aircraft-installed flashlight holders are indeed installed

NOTE: Flashlights are not required to be in the holders; however, when they are, they must be charged and operable.

12) Galleys, to ensure that the following items are operable:

- The latching mechanisms (primary and secondary)

EBOOK VOLUME 12. SURVEILLANCE

- The tie-downs
- Other galley restraints

13) Galleys, to ensure the following:

- That the hot liquid restraint system is operable
- That the circuit breakers and water shut-off valves are accessible and properly identified
- That the cover and lining of trash receptacles fit properly
- That the non-skid floor is serviceable
- That the girt bar is clean and serviceable
- That the stationary cart tie-downs (mushrooms) are clean
- That the galley carts are in serviceable condition and properly stowed
- That, if applicable, the lower lobe galley emergency cabin floor exits are passable and not covered by carpeting

14) Galley personnel lift (if applicable) to ensure that it does not move up or down with the doors open and that the activation switches operate properly.

15) Lavatories, to ensure the following:

- That the placards are present and that the smoke alarm and ashtrays are present and operational
- That the trash receptacle cover and lining fit properly
- That the automatic fire extinguisher system is serviceable
- Stowage compartments, to ensure the following:

EBOOK VOLUME 12. SURVEILLANCE

- o That the mass restriction placards are displayed
 - o That the restraints and secondary latching mechanisms are operable
 - o That the compartments comply with stowage requirements for accessibility to emergency equipment
- 16) Crew baggage, to ensure that it is properly stowed.
- 17) Emergency lighting system, to ensure that all emergency lighting, including the floor proximity escape path system, is in serviceable condition (for example, no light covers should be cracked or missing).

F. Pre-Departure. The Inspector should perform the following during pre-departure:

- 1) Ensure that each CCM has an operable flashlight readily available and has the appropriate up-to-date parts of a manual accessible when performing assigned duties.
- 2) Ensure that any discrepancies noted during pre-departure are addressed per the operator's manual.
- 3) Ensure that the required number of CCMs are onboard.
- 4) Observe the CCM's and ground personnel coordinating and supervising the boarding of passengers and properly stowing carry-on baggage.

NOTE: Ensure that the passenger-loading door is not closed until a required crew member verifies that each piece of carry-on baggage is properly stowed. Proper stowage includes ensuring that the overhead bins are closed. Items that cannot be stowed must be processed as checked baggage.

- 5) Ensure that items such as carry-on baggage and galley supplies do not cover or in any way interfere with aircraft emergency equipment in the overhead compartments.
- 6) Ensure that a required crew member verifies that passengers seated at the emergency exit seats meet the regulatory requirements.

NOTE: At some time prior to takeoff, the CCM must brief the passengers seated in the

EBOOK VOLUME 12. SURVEILLANCE

emergency exit seats on the selection criteria and their willingness and ability to perform the functions, according to the operator's approved program.

- 7) Ensure that all passengers are seated prior to any ground movements.
- 8) Ensure that the CCM's have sufficient time to take their assigned positions and to secure their restraint systems after giving the passenger briefing.
- 9) Ensure that the CCM pre-departure briefing is audible to all passengers and covers the following subjects:
 - a) Smoking: Statement that Saudi Law prohibits smoking and tampering with, disabling, or destroying any smoke detector in an airplane lavatory.
 - b) Exit Locations: The preferred method is to physically point out exits.
 - c) Safety belt Use: Instructions on how to fasten, unfasten, and adjust safety belts.
 - d) Flotation Devices: Instructions on the location and use of required individual flotation devices.
 - e) Oxygen Use: Instructions on the location of and a demonstration on the use of the oxygen mask.
 - f) Extended Overwater Operations: Instructions on the location, donning, and use of life preservers, life rafts (or slide rafts) and other means of flotation including a demonstration of the methods of donning and inflating a life preserver.

NOTE: The method of donning and inflating infant life preservers is usually substantially different from the method used for an adult life preserver.

- g) Special Passenger Briefings (when applicable): For persons who are handicapped or warrant some other special kind of attention, and for the individuals assisting them.

NOTE: GACAR Part 125 operators must include in their general briefing the location of survival equipment, when applicable, and the location and use of fire extinguishers.

G. Movement on the Surface. During movement on the surface, the Inspector should do the

EBOOK VOLUME 12. SURVEILLANCE

following:

1) Ensure that all CCM's remain seated during the taxi unless performing safety-related functions. Safety-related activities can include the following:

- Passenger preparedness
- Baggage/cargo/galley stowage
- Exit readiness

2) Ensure that each exit is closed and locked with the girt bars properly attached (if applicable).

3) Ensure that the following items or activities are accomplished prior to takeoff:

- a) All stowage compartments are properly secured and latched.
- b) The galley is prepared as follows:
 - Loose items are secured
 - All serving carts are properly restrained
- c) The cockpit door is closed in accordance with the operator's manual.
- d) Passenger safety belts are secured.
- e) Any unoccupied CCM seat restraint is properly secured for takeoff.
- f) Any other equipment is properly stowed and secured.
- g) Ensure that crew members observe the sterile cockpit rules.

H. In-Flight Operations. During in-flight operations, the Inspector should do the following:

1) Monitor the crew members' performance during in-flight operations, to ensure the following:

EBOOK VOLUME 12. SURVEILLANCE

- a) That during takeoff each CCM remains seated with restraint systems properly fastened.
 - b) That after takeoff, before or immediately after the seat-belt illumination is shut off, an announcement is made that passengers should keep their safety belts fastened, even when the seatbelt sign is turned off.
 - c) That, if the flight is to be a smoking flight, an announcement is made that smoking is only permitted in specific rows and prohibited in the aisles and lavatories when the no-smoking sign is turned off.
- 2) Ensure that the following are accomplished, as applicable:
- a) Passenger compliance with “seatbelt” and “no smoking” signs.
 - b) Effective crew coordination for flight crew and cabin crew member communications —routine and/or emergency.
 - c) Turbulent air procedures are followed, including the proper restraint of serving carts, galley equipment, and compliance with instructions from the cockpit and coordination with flight crew members.
 - d) Crew member handling of the passengers, to include the following:
 - Abusive or disruptive passengers
 - Handicapped or ill passengers
 - Passengers requiring special attention
- 3) Ensure that crew members, during the approach and landing phases of flight, prepare the cabin for arrival by performing at least the following actions:
- a) Ensuring that carry-on baggage is stowed and that all seat backs and tray tables are upright and stowed, respectively.
 - b) Removing all food, beverages, and galley service items from each passenger seat location.

EBOOK VOLUME 12. SURVEILLANCE

- c) Ensuring that all stowage compartments are latched and secured.
 - d) Ensuring that the galley is prepared as follows:
 - Loose items are secured
 - All serving carts are properly restrained
 - e) Ensuring that the cockpit door is closed and locked in accordance with the operator's manual.
 - f) Verifying that passenger safety belts and shoulder harnesses, if installed, are secured.
 - g) Properly stowing and securing any other equipment.
 - h) Ensure that crew members observe sterile cockpit rules.
- 4) Ensure that crew members are seated in assigned seats before landing, with appropriate restraint systems fastened.

I. Flight Arrival. During flight arrival the Inspector should do the following:

- 1) Ensure that after landing, the CCM's prepare the aircraft for arrival by performing the following duties:
 - Before the PIC has turned off the seat-belt sign, ensuring that passengers remain in their seats with safety belts fastened
 - Upon arrival at the gate and after the seatbelt sign has been turned off, preparing the exits for deplaning

NOTE: The girt bar must stay engaged during movement on the surface.

- 2) Ensure that the appropriate complement of cabin crew members remain on board the aircraft at en-route stops (when passengers remain on board the aircraft to proceed to another destination).

- 3) Debrief the captain and lead CCM of any procedural problems or

EBOOK VOLUME 12. SURVEILLANCE

discrepancies/malfunctions noted during the flight.

12.4.3.21. SEAT BACK BREAK-OVER.

A. Background.

- 1) There are some seats that *are not required* to have a break-over and are manufactured locked in the upright position. These seats are based on a minimum performance standard stated by Technical Standard Order-C39b.
- 2) To meet the requirements of GACAR § 25.785(j), industry seat manufacturers determined that a minimum break-over force of 110 Newtons (25 pound forces) is acceptable when seat backs are breaking forward from the erect position with the force applied at the top of seat back on the centerline of the seat.
- 3) Consequently, the definition of the following question is asked: What is the adequate minimum break-over force acceptable for seat backs to meet the requirements of GACAR § 25.785(j)?

B. Action. The following standards are to be used by all Inspectors in order to determine an acceptable resistance force for seat break-over: During aircraft surveillance, an Inspector discovers no break over force for an individual seat or a number of seats. Report this to a responsible person for the operator to ensure that the approved maintenance procedures for this situation are followed. For uncertainties regarding seat certification, check with the operator's principal maintenance inspector (PMI) regarding approval of these type seats.

- 1) PMIs should review their operator's continuous airworthiness maintenance program (CAMP) to ensure that the proper break-over force is listed in the maintenance program. This should be done by reviewing the seat manufacturer's specifications. The PMI should also ensure the *operator has a method of checking seat break-over during a maintenance cycle.*
- 2) Flight departures must not be delayed if/when an Inspector discovers a "no break-over force" for an individual seat or number of seats.

12.4.3.23. TASK OUTCOMES.

EBOOK VOLUME 12. SURVEILLANCE

A. Complete the GAR.

B. Completion of this task can result in the following:

- Satisfactory inspection
- Communicate concerns/findings to the applicable supervisor
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

12.4.3.25. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, other job tasks, and/or additional coordination is required between the Inspector and the applicable supervisor.

EBOOK VOLUME 12. SURVEILLANCE

Figure 12.4.3.1. Cabin En-Route Inspection Job Aid

PTRS ACTIVITY: 1625 DATE:	OPERATOR:	FLT NO:	A/C REG NO:	M/M/S:	PIC NAME:
BASE:	LEAD CCM NAME:		FROM:	TO:	RESULTS:
U = UNACCEPTABLE; P = POTENTIAL; I = INFORMATION; E = EXCEEDS					
AIRCRAFT/EQUIPMENT		EMERGENCY LIGHTNING			<ul style="list-style-type: none"> • Demonstrate "Brace for Impact" • Position
REQ. CERT/PLACARDS		<ul style="list-style-type: none"> • Operable 			
LOGBOOKS		<ul style="list-style-type: none"> • Floor System 			<ul style="list-style-type: none"> • Demo Donning of Life Vests • (if applicable)
<ul style="list-style-type: none"> • Open Items • Carryovers • Cabin Items 		<ul style="list-style-type: none"> • Controls/Seals • Girt Bar and Brackets 			
MEGAPHONES		<ul style="list-style-type: none"> • Signs/Symbols • Rafts/Lanyards 			<ul style="list-style-type: none"> • Manual • Cockpit Key • Flashlight
<ul style="list-style-type: none"> • Location • Placarded 		OTHER REMARKS			
FIRE EXTINGUISHER		CCMs			FLIGHT CONDUCT
Correct Type		CREW COMPLEMENT			PRE-DEPARTURE
<ul style="list-style-type: none"> • Number • Serviced • Location 		<ul style="list-style-type: none"> • Initial Boarding • En-Route Stops 			<ul style="list-style-type: none"> • Passenger Boarding • Carry-On Bags • Passenger Count
PORTABLE O2 BOTTLES		CREW COORDINATION			<ul style="list-style-type: none"> • Girt Bars
<ul style="list-style-type: none"> • Number • Serviced • Location • Masks/Hoses • PBE • Properly Stowed • Placarded • Sealed 		<ul style="list-style-type: none"> • With Cockpit • MANUAL AVAILABLE • MANUAL CURRENCY • PASSENGER HANDLING • STERILE COCKPIT • Procedures • Cockpit Signals 			<ul style="list-style-type: none"> • Door Preparation • Briefings • Smoking • Exit Locations • Safety Belt Use • Flotation Means • Table/Seat Back • Bags Stowed • Oxygen Use (if applicable) • Over-Water Use (if applicable) • Special Passenger (if applicable) • After T/O and Before Landing • Briefings
ADDITIONAL EMER. EQUIP.		<ul style="list-style-type: none"> • Life Vests • Life Rafts • Emergency Radios 			<ul style="list-style-type: none"> • PIC Authority • Cabin Logbook • Hijacking • Decompression • Cabin Fires • Turbulent Air Operations • Unruly Passenger • Emergency Comm. With Cockpit • Location of all Emergency Equipment • Contents of Manual
PAX SEATS		<ul style="list-style-type: none"> • Emergency Exits • Condition • Ash Trays • Safety Belts/Trays 			<ul style="list-style-type: none"> • CCM's Seated • T/O Signal • In-Flight Service • Turbulence
PAX 02 SERVICE UNIT		ABILITY/PROFICIENCY			TAXI/TAKEOFF
<ul style="list-style-type: none"> • Operational • Service Pins • CCM Station • Retracts • Condition 		<ul style="list-style-type: none"> • Remove/Demonstrate Use of O2 Bottle and Fire Bottle (Simulated) • Explain How to Deploy a PSU • Msimually 			<ul style="list-style-type: none"> • Items Secured • CCM's Seated
P/A & Interphone		<ul style="list-style-type: none"> • Demonstrate Emergency Exit Procedures 			CRUISE
GALLEYS		OTHER REMARKS			LANDING/TAXI
<ul style="list-style-type: none"> • Latch Mechanisms • Restraints/Tiedowns/Covers • Debris/Corrosion 					
LAVATORIES					
<ul style="list-style-type: none"> • Smoke Alarm • Signs/Lights • Extinguishers 					
STOWAGE AREAS					
<ul style="list-style-type: none"> • Latch Mechanisms • Access to Equipment 					

EBOOK VOLUME 12. SURVEILLANCE

Figure 12.4.3.2. Cabin En-Route Interior Inspection Reference Chart

ITEM	AIRCRAFT	CREW MEMBER	FLIGHT CONDUCT	OPERATIONS
Approved Infant or Child Restraint System	Placement and Approved Type	Knowledge of Location, Placement, and Approved Use	Proper Use and Placement	
Carry-on Baggage	Proper Restraints and Placards for Cargo Compartments	Knowledge of Approved Program	Properly Stowed Ensure Compliance	Screened by Ground Personnel Number or Size Allowance
Emergency Lights Proximity Lighting	Condition	Knowledge of Activation		
Emergency Medical Kit	Proper Number Installed and Secured	Knowledge of Location and Authorized Use		
Evaluation Slides/Rafts	Proper PSI condition of Floor Brackets	Knowledge of Location and Operation		
Exit Seating	Briefing Card on Each Affected Seat	Knowledge of Procedures Verify Occupant's Eligibility	Compliance with Operator's Approved Program	Ground Support
Exits/Cabin Doors	General condition (Seals, Handles, Etc.)	Knowledge of Normal and Emergency Use	Doors Armed During Aircraft Movement	
CCM Complement	Number of Passenger Seats	Knowledge of Required Number of Crew Members	Evenly Distributed	Ground Personnel and CCM Coordination Prior to Boarding
Fire Extinguishers	Number Installed Type Inspection Date	Knowledge of Use		
First Aid Kits	Number Installed and Properly Secured	Knowledge of Location and Use	Proper Use	
Fixed Oxygen System	Components Closed—No Extension of Red Tags	Knowledge of System and Locations of Additional Drop-Down Masks		
Flashlights	Number Equal to Number of Crewmembers	Knowledge of Locations		
Galley Lifts	Safety Interlock Mechanism Operational	Knowledge of Operation	Proper Use, No More Than One Occupant	
Handicapped Passenger Briefing		Knowledge of Handicapped Briefing	Briefing Stowage of Assistance Devices	
Jumpseats	Automatic Retract/Locking Harness/Safety Belt Condition of Seat Harness and Belt	Knowledge of Use	Use During Takeoff and Landing	
Lavatories	Placards Trash Receptacle Smoke Detectors Ashtrays	Preflight Check Knowledge of Operations	Responsive to Smoke Detector, if Activated	

EBOOK VOLUME 12. SURVEILLANCE

Life Vests	Accessible to All Pax (If Installed)	Knowledge of Use and Location		
Life Rafts (If Installed)	Proper Number and Location (Capacity to Accommodate All Pax)	Knowledge of Location, Operation, and Use of Accessory Kits		
Manual	Includes Information Specific to Aircraft	Knowledge of Content	Accessible Current	
Megaphones	Correct Number Installed	Knowledge of Use and Removal From Bracket		
Passenger Info/Safety Briefing	PA or Video – Clarity	Demonstration and Verbal Briefing Content	Performed Prior to Takeoff	
Passenger Safety Belts	Installed General Condition	Knowledge of Use		Pax Seat Belt Discipline When Sign is Illuminated
PBE	Properly Installed Secured	Knowledge of Location and Procedures for Use		
Placards	Installation	Preflight Check		
Portable Oxygen	Number Installed Stowed PSI	Knowledge of Use	Proper Use Execution of Administrative Procedures	
Safety Briefing Cards	Conveniently Located Applicable to Aircraft	Knowledge (Presence and Location)		Technically Correct
Seatback/Tray Table	Latching Mechanism	Knowledge of Secure Procedures	Check to Ensure Full Upright Position During Takeoff and Landing	
Service Carts	Condition Properly Secured	Knowledge of Use	Proper Use/Not Left Unattended Without Securing	
Sterile Cockpit	Signals	Knowledge of Procedures	Compliance	

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 5. PART 91 INSPECTIONS

Section 1. Inspection of a Part 91 Operator

12.5.1.1. GACA ACTIVITY REPORT (GAR).

A. GAR 1661 (OP)

B. GAR 3691 (AW)

12.5.1.3. OBJECTIVE. The objective of this task is to determine if an airmen and/or operator is complying with General Authority of Civil Aviation Regulation (GACAR) Part 61 and 91.

12.5.1.5. INSPECTION JOB AID.

A. Part 91 Operator Inspection Job Aid. This job aid (Figure 12.5.1.1) is provided for the aviation safety inspector's (Inspector) use. It should be used when conducting the inspection at the operator's principal base of operations, where pilot records and aircraft are likely to be available for inspection.

B. Design of Job Aid. The job aid is designed for an Inspector's (Operations) use. However, if the Inspector (Operations) is accompanied by an Inspector (Airworthiness), then the "Pilot" section is for the Inspector's (Operations) use, and the "Aircraft" section is for the Inspector's (Airworthiness) use.

12.5.1.7. GENERAL INSPECTION INFORMATION.

A. Scheduled Inspections. Scheduled inspections are normally done at the operator's principal base of operation.

B. Common Reasons for a Ramp Inspection. Ramp inspections may result when the Inspector:

- Observes an unsafe operation in the traffic pattern or on the ramp
- Is notified by ATC of an unsafe operation

EBOOK VOLUME 12. SURVEILLANCE

- Conducts normal surveillance

C. Ramp Inspections Planned for a Specific Operator. Most ramp inspections are not planned for a specific operator; however, when they are planned, the Inspector should review the General Authority of Civil Aviation (GACA) office files. Some of the reasons a ramp inspection might be planned include:

- Recurring complaints
- Suspected non-compliance with the GACARs

12.5.1.9. DISCREPANCIES FOUND DURING INSPECTION. The inspection should be continued unless a discrepancy is discovered that would affect the safety of flight or dispatch of the aircraft which may result in non-compliance with the GACARs. All discrepancies must be noted on the job aid and discussed with the operator. The Inspector may explain how to correct discrepancies found during the inspection, but the Inspector should keep in mind that it is the operator's responsibility to ensure that items are in compliance with GACAR.

12.5.1.11. PILOT DOCUMENTS. When asked, the pilot should present:

- Current airman certificate(s)
- Medical certificate
- Biennial flight review
- PIC/Instrument proficiency check
- Special flight authorizations (as applicable)

12.5.1.13. AIRCRAFT DOCUMENTS. Following are considerations when examining aircraft documents, including registration and airworthiness certificates and approved flight manuals. Discrepancies found concerning the airworthiness or registration certificates shall be brought to the attention of the operator, documented, and given to the GACA Airworthiness Division for action.

A. Registration Marks (HZ-Numbers). The registration marks on the registration certificate must match the registration marks on the airworthiness certificate.

EBOOK VOLUME 12. SURVEILLANCE

B. Registration Certificate. If the registered owner has changed, you may see a temporary registration which is good for 120 days. If the ownership has changed without a temporary registration or the registration marks do not match, the registration is not valid.

C. Radio Station License. An aircraft Kingdom of Saudi Arabia (KSA) Radio Station License is required. Any discrepancy concerning the radio license should be brought to the attention of the operator.

D. Flight Manual. An Aircraft Flight Manual (AFM) is required to be on board the aircraft (GACAR § 91.303) along with the appropriate markings and placards.

E. Mass and Balance Information. Mass and balance documents to include a list of installed equipment must be on board the aircraft. Some operators have Minimum Equipment Lists (MELs) with a certificate of authorization issued by GACA. These must be on board. The Inspector should compare inoperative equipment to the MEL to assure compliance (See Volume 5, Chapter 4, Section 1, Approve a MEL for Part 91 Operators).

F. Airworthiness Certificate. The certificate most often seen by an Inspector is a standard airworthiness certificate. A special airworthiness certificate must be accompanied by a list of limitations and conditions (GACAR §§ 21.183-191) necessary for safe operation. The registration marks on the certificate must match the registration marks on the aircraft to be valid.

G. Records of Maintenance Inspections. The Inspector should check the appropriate records, when they are available, for required maintenance inspections.

- 1) Operators seldom carry aircraft and engine logbooks in the aircraft. However, if they do, the logbooks should be checked there as well as at the base of operations.
- 2) Some operators keep required maintenance information on a computer or on an aircraft status board. When aircraft and engine logbooks are not available, these types of records may be examined in lieu of the appropriate logbooks. Computer-stored records must be retrievable by the operator for Inspector review.

H. Required Inspections. If the operator does have records available verifying maintenance, the Inspector should check to see if the following required inspections (as applicable) have been accomplished (as applicable):

EBOOK VOLUME 12. SURVEILLANCE

- Annual inspection
- 100 hour inspection
- Progressive inspection
- Altimeter system and altitude reporting equipment tests and inspections
- ATC transponder tests and inspections

12.5.1.15. VOR EQUIPMENT CHECK. When the Inspector is determining if the VOR equipment check has been accomplished, they should keep in mind that the record of compliance does not necessarily have to be kept in the aircraft logbook. Some operators may choose to keep a notebook or other record of such checks in the aircraft. If the equipment is being maintained, checked, and inspected under an approved procedure, the Inspector should determine what that procedure is and where the records are kept (GACAR § 91.187).

12.5.1.17. ELT BATTERY. The emergency locator transmitter (ELT) battery installation and expiration date should be entered in the aircraft logbook. If the logbook is not available, the battery can be examined for the expiration date (GACAR Part 91, Appendix C).

12.5.1.19. GENERAL AIRWORTHINESS. When an Inspector checks the aircraft for general airworthiness, they should keep in mind that the inspection should not resemble a 100-hour or annual inspection. Rather, it is similar to a pre-flight inspection to check for obvious discrepancies which could affect the safety of flight (GACAR §§ 91.443 and 91.445). For example, some obvious discrepancies to check for include fuel or oil leaks, damaged tires, prop seal leaks, broken exhaust hoses, etc.

12.5.1.21. SEAT BELT AND “NO SMOKING” SIGNS. “Seat belt” and “no smoking” signs are not required to be installed, but if they are, they must be operable.

12.5.1.23. OVERWATER OPERATIONS. The Inspector should note that the survival equipment requirements differ depending upon the distance from the nearest shore of the overwater flight (GACAR § 91.303).

12.5.1.25. PASSENGER BRIEFING CARDS. Passenger briefing cards are not required, but if they are used to supplement an oral briefing they must be available to all passengers and must refer to the

EBOOK VOLUME 12. SURVEILLANCE

specific type and model of airplane (GACAR § 91.45).

12.5.1.27. PREREQUISITES. This task requires knowledge of the regulatory requirements of GACAR Part 91 and GACA policies and qualifications as an Inspector.

12.5.1.29. REFERENCES, FORMS, AND JOB AIDS.

A. References.

- GACAR Part 1, 61 and 91

B. Forms.

- GACA Activity Report (GAR)

C. Job Aids.

- Figure 12.5.1.1, Part 91 Operator Inspection Job Aid

12.5.1.31. PRE-INSPECTION ACTIVITIES.

A. Method of Inspection. Determine if the inspection is to be unannounced or scheduled with the operator.

- 1) If the inspection is to be unannounced, review the GACA office file on the aircraft/operator.
- 2) If the inspection is to be scheduled, contact the operator and arrange a mutually agreed upon time and location for the inspection. Specify that it should be a time when required personnel, records, and aircraft will be available. Inform the operator of the required records to have available at the inspection, specifically aircrew and aircraft documents.

B. Review Office Files. Review the office file on the aircraft/operator. Note on the job aid areas of special emphasis for the following:

- Past inspection reports
- Discrepancies from previous inspections

EBOOK VOLUME 12. SURVEILLANCE

- Complaints
- Record of flight checks
- Any follow-up items from previous inspections

C. GAR. Open a GACA Activity Report (GAR).

12.5.1.33. CONDUCT INSPECTION. Using the Part 91 Operator Inspection Job Aid (Figure 12.5.1.1), conduct the inspection as follows:

A. Review Pilot Documents.

- 1) Inspect the pilots' airman certificate(s). Determine if the ratings and limitations are appropriate for the type of operations being conducted.
- 2) Inspect the pilot's medical certificate. Determine if it is current and the appropriate class. Check for a Statement of Demonstrated Ability, if required on a medical certificate.
- 3) Inspect pilot logbooks (or other reliable records) to determine recency of experience and qualifications of pilot-in-command.
- 4) Review the pilot's Airman Competency/Proficiency Check Form (GACAR § 61.17).
- 5) Note any discrepancies on the job aid.

B. Record Aircraft Information. On the job aid record the aircraft registration marks, make and model, and whether owned or leased for each aircraft used by the operator.

C. Inspect Aircraft Documents.

- 1) For each aircraft, inspect the aircraft and engine logbooks and maintenance records for compliance with appropriate tests and inspections.
- 2) Determine that the proper airworthiness certificate is displayed at the cabin or cockpit entrance. Note whether it is visible to passengers and/or crew.
- 3) Examine the registration certificate to ensure that it is issued for that specific aircraft.

EBOOK VOLUME 12. SURVEILLANCE

Determine that the registration marks on the certificate is the same as on the aircraft. Check that the certificate is issued to the present owner of the aircraft.

- 4) Check the KSA Radio Station License and note its expiration date.
- 5) Determine that there is a current and approved Airplane Flight Manual (AFM) on board the aircraft.
- 6) Determine if there is current mass and balance information in the aircraft by examining the AFM. Compare equipment listed on the mass and balance form to the actual equipment installed. If the actual equipment installed differs from the equipment listed on the mass and balance form, inform the operator that new mass and balance data must be prepared. Ensure the aircraft has been weighed within the last 3 years per GACAR Part 91 requirements.
- 7) Check the MEL to determine that it has (as applicable):
 - a) Been issued by registration marks and serial number to the aircraft operator
 - b) The current MMEL revision number
 - c) GACA issued authorization for the MEL
 - d) Check deferred items for placards and dates (See Volume 5, Chapter 4, Section 1, Approve a MEL For Part 91 Operators).
- 8) Determine if pertinent and current aeronautical charts are available.
- 9) Ask the operator what type of instrument operations are conducted; for example, ILS, DME, RNAV. Determine if the required radio and navigational equipment is installed for the specific operations conducted.
- 10) If applicable, determine if a current VOR Equipment Check has been performed.
- 11) Inspect seats and safety belts for installation and condition.
- 12) Determine if the ELT (Emergency Locator Transmitter) is installed. Check the expiration date of the battery.

EBOOK VOLUME 12. SURVEILLANCE

- 13) Determine general airworthiness of the aircraft by inspecting the aircraft's exterior in a manner similar to a preflight inspection.

12.5.1.35. TASK OUTCOME.

A. Complete the GAR.

B. Job Aid. File the job aid according to normal office procedures.

C. Completion of this task can result in the following:

- Satisfactory inspection
- Communicate concerns/findings to the Office Manager
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

12.5.1.37. FUTURE ACTIVITIES.

- Additional programmed or spot inspections
- A follow-up inspection to determine if any noted discrepancies have been corrected

EBOOK VOLUME 12. SURVEILLANCE

Figure 12.5.1.1. Part 91 Operator Inspection Job Aid

Pilot Name/Address:	Inspection Location:			Date:	
Inspector Name:					
I. Pilot Information:	Certificate Information			Medical	
Name	Grade	Ratings	Number	Class	Date
Inspection Items		Sat	Unsat	Remarks:	
Pilot /Medical Certificates					
Pilot Logbooks(if available)					
Pilot Experience/Qualifications					
Biennial Flight Review					
Proficiency Check, as applicable					
II. Aircraft Documents					
Aircraft Logbooks					
Airworthiness Certificate					
Registration Certificate					
Radio Station License					
Aircraft Flight Manual (AFM)					
Minimum Equipment List (MEL)					
VOR Equipment Check					
Pertinent & Current Aero Charts					
Radio/Navigation Equipment					
Seat/Safety Belts					
ELT					
General Airworthiness					
Other					
Inspection Results: Satisfactory _____ Unsatisfactory: _____					
Follow-up Letter Required: Yes: _____ No: _____					
Remarks:					

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 5. PART 91 INSPECTIONS

Section 2. Maintenance Records Inspection for Part 91

12.5.2.1. GACA ACTIVITY REPORT (GAR).

A. 3694 (AW)

12.5.2.3. OBJECTIVE. This section provides guidance for inspecting the maintenance records required by General Authority of Civil Aviation Regulations (GACAR) Part 91. Most often this inspection is performed at the time of renewal of the airworthiness certificate.

12.5.2.5. GENERAL. GACAR § 91.457 establishes the recordkeeping responsibilities and requirements for the registered owner/operator of the aircraft while GACAR §§ 43.11 and 43.15 establish the recordkeeping responsibilities and requirements for the personnel who maintain the aircraft. These records must contain a description of the work performed, the name of the person performing the work and the name or other positive identification of the individual approving the work.

A. Current Airworthiness Directives (AD) Status. Per GACAR § 91.457(a)(2)(v), the owner must keep a record showing the current status of applicable Airworthiness Directives (ADs).

1) This record must include the following:

- The current status of ADs applicable to the aircraft, including the AD number and revision date
- The method of compliance
- The time-in-service, or the cycles, and/or the date when the next action is required for a recurring

2) An acceptable method of compliance should include a reference to either a specific portion of the AD or a manufacturer's service bulletin, if the bulletin is referenced in the AD.

EBOOK VOLUME 12. SURVEILLANCE

3) The document that contains the current status of ADs method of compliance may be the same as the record of AD accomplishment. The record of nonrecurring ADs must be retained with the aircraft indefinitely. If selling the aircraft, the records must be transferred to the new owner.

NOTE: The owner is required to provide the General Authority of Civil Aviation (GACA) with completed Airworthiness Directive Compliance Record, at the time of each renewal of the airworthiness certificate.

B. Total Time-in-Service Records. GACAR § 91.457(a)(2)(i) requires the total time-in-service records for airframes, engines, rotors, and propellers to be retained by the owner. These records are used to schedule overhauls, retirement life limits, and inspections.

1) Total time-in-service records may consist of the following:

- Aircraft maintenance record pages
- Designated cards or pages
- A computer listing
- Other methods accepted by the GACA

2) Total time-in-service records must be retained with the aircraft indefinitely. If selling the aircraft, the records must be transferred to the new owner.

C. Life-Limited Parts Current Status Records. GACAR § 91.457(a)(2)(ii) requires retention by the owner of records for components of the airframe, engine, propellers, rotors, and appliances that are identified to be removed from service when the life limit has been reached.

1) The current life-limited status of the part is a record indicating the life limit remaining before the required retirement time of the component is reached. This record must include any modification of the part according to ADs, service bulletins, or product improvements by the manufacturer or applicant.

2) The following are not considered to be current life-limited status records:

- Work orders

EBOOK VOLUME 12. SURVEILLANCE

- Purchase requests
- Sales receipts
- Manufacturers' documentation of original certification
- Other historical data

- 3) Whenever the current status of life-limited parts records cannot be established or has not been maintained (e.g., a break in current status) and the historical records are not available, the airworthiness of that product cannot be determined and it must be removed from service.
- 4) Current status of life-limited parts records must be retained with the aircraft indefinitely. If selling the aircraft, the records must be transferred to the new owner.

NOTE: The owner is required to provide GACA with a completed Life Limited Component/Part Status Form, at the time of each renewal of the airworthiness certificate.

D. Approval for Return to Service.

- 1) Per GACAR § 91.457(a)(1), following the performance of maintenance, preventive maintenance, or alterations on an aircraft, an approval for return to service must be completed before operating the aircraft.
- 2) The person approving/disapproving the return to service on the aircraft, airframe, engine, propeller, appliance, or component must make an entry in the maintenance record that contains the following information:
 - A description (or reference to data acceptable to the GACA) of work performed
 - The date of completion of the work performed
 - The signature, certificate number, and kind of certificate of the person approving the work

E. Time Since Last Overhaul.

Per GACAR § 91.457(a)(2)(iii), the owner/operator must record the time and/or cycles since the last overhaul of all items installed on the aircraft that are

EBOOK VOLUME 12. SURVEILLANCE

required to be overhauled on a specified time basis. Reference to the time since last overhaul of an item must not be confused with an overhaul record, which requires a description of the work and identification of the person who performed and/or approved the work.

F. Overhaul Records.

1) Per GACAR § 91.457(a)(2)(iii), a record must be made by the person performing maintenance when overhauling an item of aircraft equipment. This record must include the following:

- A description of the work performed or a reference to data acceptable to the GACA
- The date of completion of the work performed
- The name of the person performing the work if other than the person approving for return to service
- The signature, type of certificate, and certificate number of the person approving the aircraft/component for return to service

NOTE: A return to service tag does not constitute an overhaul record but may be used to reference the overhaul records.

2) The owner/operator must retain the record and make it available to the aviation safety inspector (Inspector) upon request. The overhaul records must be retained until the work is superseded by work of equal scope and detail.

G. Current Aircraft Inspection Status.

1) Per GACAR § 91.457(a)(2)(iv), the owner/operator must retain a record identifying the current inspection status of each aircraft. This record must show the time-in-service since the last inspection required by the inspection program under which the aircraft and its appliances are maintained.

2) This record must be retained until superseded by work of equal scope and detail.

H. Major Repair and Major Alteration Records. Per GACAR § 91.457(a)(2)(vi), owners/operators must retain the records (GACA Major Repair and Alteration Form) for each

EBOOK VOLUME 12. SURVEILLANCE

major repair/alteration made to an aircraft, including any work done on the following:

- Airframe
- Engine
- Propeller
- Rotor
- Appliance

1) The records for must be must be retained and transferred with the aircraft at the time the aircraft is sold.

12.5.2.7. REFERENCES, FORMS, AND JOB AIDS.

A. References:

- GACAR Part 39, 43 and 91
- FAA Advisory Circular (AC) 43-9 (as amended), Maintenance Records.

B. Forms.

- GACA Activity Report (GAR)

C. Job Aids. None.

12.5.2.9. PROCEDURES.

A. Contact the Owner/Operator. Arrange to obtain the aircraft maintenance records for review.

B. Review the Owner/Operator's Maintenance Records . Determine whether the recordkeeping requirements of the regulations have been met.

1) Ensure that the entries for maintenance include the following:

EBOOK VOLUME 12. SURVEILLANCE

- A description of the work performed
- The date of completion
- Signature and certificate number of the person approving the aircraft for return to service

2) Ensure that the entries for inspections, excluding progressive inspections, include the following:

- Type of inspection
- Brief description of the extent of the inspection
- Date of the inspection
- Total time-in-service for the aircraft
- Signature, certificate number, and kind of certificate held by the person approving or disapproving the aircraft for return to service
- A statement certifying the airworthiness status of the aircraft

3) Ensure that the owner/operator has records containing the following information:

- Total time-in-service for the airframe
- The current status of life-limited parts of each airframe, engine, propeller, rotor, and appliance
- Total time since last overhaul for those items installed on the aircraft that are required to be overhauled on a specified time basis
- Current inspection status of the aircraft, including time since last inspection, as required by the program under which the aircraft and its appliances are maintained
- GACA Major Repair and Alteration Form for each major alteration to airframe, engine, rotors, propellers, and appliances

EBOOK VOLUME 12. SURVEILLANCE

4) Ensure that the owner/operator has records for the current status of each applicable AD, including the following:

- The method of compliance
- The AD number and revision date
- The time and date of any recurring actions required by the Ads

C. Analyze Results. Bring any discrepancies to the attention of the owner/operator.

12.5.2.11. TASK OUTCOMES.

A. Complete the GAR.

B. Completion of this task can result in the following:

- Satisfactory inspection
- Communicate concerns/findings to the Office Manager
- Follow-up inspection for a particular discrepancy
- If compliance enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

C. File all supporting paperwork in the owner/operators GACA office file.

12.5.2.13. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, other job tasks, and/or additional coordination is required between the Inspector and the Office Manager.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 5. PART 91 INSPECTIONS

Section 3. Inspect an Approved Aircraft Inspection Program for Part 91

12.5.3.1. GACA ACTIVITY REPORT (GAR).

A. 3637 (AW) (Part 91 Inspection Program)

12.5.3.3. OBJECTIVE. This section discusses the procedures for inspecting aircraft and Aircraft Inspection Programs (AIP) under General Authority of Civil Aviation Regulations (GACAR) Part 91.

12.5.3.5. INSPECT AND EVALUATE AIRCRAFT. GACAR § 91.443 places the responsibility for maintaining the aircraft in airworthy condition on the owner. The aviation safety inspector (Inspector) is tasked with inspecting the aircraft to verify that it is airworthy.

A. Required Instruments and Equipment. All Saudi Arabian-registered aircraft flown under GACAR Part 91 must be equipped with instruments and equipment according to the kinds of operation for which the aircraft is engaged it. GACAR § 91.303 provides the specific requirements for each kind of operation.

B. Annual and 100-Hour Inspections.

1) Annual Inspection. GACAR § 91.449(a) requires that a person who operates an aircraft must ensure that the aircraft has been inspected in accordance with the requirements of an annual inspection.

2) 100-Hour Inspection. GACAR § 91.449(b) requires 100-hour inspections (in addition to annual inspections) under the following situations:

- Aircraft are operated for carrying persons for compensation or hire
- Aircraft are used for flight instructions, if furnished by the flight instructor

NOTE: An aircraft inspected in accordance with an approved aircraft inspection program

EBOOK VOLUME 12. SURVEILLANCE

under GACAR Part 125 or 135 does not have to comply with the annual and 100-hour inspection requirement.

C. Progressive Inspections. Each registered owner or operator of an aircraft desiring to use a progressive inspection program must submit a written request to the President, and comply with the provision in GACAR § 91.449(d).

D. Approved Aircraft Inspection Programs. Airplanes with a maximum take-off mass greater than 5700 kg, turbine-powered multi-engine airplanes, and turbine-powered rotorcraft that were certificated in other than the transport or commuter categories must be inspected according to the requirements of an inspection program selected by the owner/operator. GACAR § 91.449(f) outlines various options available to the owner/operator:

- 1) An aircraft inspection program approved under GACAR § 135.419 and currently in use by a person holding an air operating certificate (AOC) issued under GACAR Part 135.
- 2) Inspection programs currently recommended by the manufacturer of the aircraft, aircraft engines, propellers, appliances, or survival and emergency equipment.
- 3) Any other aircraft inspection program established by the registered owner or operator of that airplane or turbine-powered rotorcraft and approved by the President under GACAR § 91.449(g). However, the President may require revision of this aircraft inspection program in accordance with the provisions of GACAR § 91.455.

12.5.3.7. COMPUTERIZED MAINTENANCE TRACKING AND RECORDKEEPING

PROGRAMS. Computer software companies and operators have developed computer programs designed to function as maintenance tracking programs to track items such as scheduled maintenance, airworthiness directives, and service bulletins. Operators may have these programs in-house or they may send their data to the software company to track the maintenance for them. In either case, the owner/operator is responsible for the proper accomplishment of maintenance. These programs provide greater accuracy and reliability in tracking maintenance over older methods and do not require approval of the General Authority of Civil Aviation (GACA). However, if an operator uses a computer program to comply with the recordkeeping and maintenance recording requirements of the GACAR, then prior approval is required. These types of programs eliminate the “paper” maintenance records and replace them with computerized records that have digital signature capabilities. GACA approval of one of these programs for one owner/operator does not constitute approval for use of the same program by all operators nor does it grant approval of the program for the computer software

EBOOK VOLUME 12. SURVEILLANCE

company.

NOTE: See Federal Aviation Administration (FAA), Advisory Circular (AC) 120-78 (as amended), Acceptance and Use of Electronic Signatures, Electronic Recordkeeping Systems, and Electronic Manuals.

12.5.3.9. COORDINATION REQUIREMENTS. This task may require coordination between Inspectors (Airworthiness).

12.5.3.11. REFERENCES, FORMS, AND JOB AIDS.

A. References:

- GACAR Part 39, 43, 65 and 91
- FAA AC 43-9 (as amended), Maintenance Records.
- FAA AC 43-16 (as amended), General Aviation Maintenance Alerts.

B. Forms. GAR.

C. Job Aids. None.

12.5.3.13. PROCEDURES.

A. Conduct Surveillance of the Aircraft. Examine the aircraft to determine, to the extent possible, that it is in condition for safe operation. Ensure that the inspection is accomplished, either in the presence of, or with specific approval from the owner/operator.

1) *Inspect the Airworthiness Certificate.* Ensure that the airworthiness certificate is current, correct, and in the aircraft.

2) *Inspect the Registration Certificate.* Ensure that the registration certificate is current and correct. If it is a temporary certificate, ensure that it has not expired.

3) *Inspect the Aircraft.* Ensure that:

- a) The general condition of the aircraft is airworthy.

EBOOK VOLUME 12. SURVEILLANCE

- b) The approved flight manual (AFM) or pilot's operating handbook are complete and current.
- c) The aircraft complies with applicable maintenance, operating, and equipment rules.
- d) The aircraft complies with Airworthiness Directives (ADs).
- e) The aircraft records indicate that it complies with life-limited parts requirements.
- f) Properly certificated persons have been performing maintenance and inspections.

4) *Additional Items to Check.* Although by no means a complete list, the following are examples of items to be checked:

- Proper internal and external placarding
- Obvious signs of excessive wear and deterioration, including corrosion, worn places on tires, nicks in the leading edge of the propeller blades, broken windshields, etc.
- Condition of fabric on fabric-covered control surfaces, wings, or fuselages
- The interior of the aircraft for obvious deterioration
- Tires and brakes for serviceability
- Any other indication that would render the aircraft unsafe for flight

B. Review Maintenance Records. Ensure that persons approving and disapproving equipment for return to service after any required inspection have entered the inspection in the record of that equipment. When an owner maintains a single record, ensure that the entry for required inspections is made in that record. Ensure that if the owner maintains separate records for the airframe, engines, powerplants, propellers, appliances, and components, the entry for required inspections is entered in each, as applicable.

1) *Annual/100-Hour Inspection.* Review records to ensure compliance with the requirements of GACAR § 43.15 and § 91.457. Determine whether the appropriate entries have been made and have met regulatory requirements.

EBOOK VOLUME 12. SURVEILLANCE

2) *Progressive Inspection.* Ensure that records indicate the following:

- Completion of an annual inspection before starting inspections under a progressive inspection program
- Compliance with inspection intervals prescribed in the progressive program
- Completion of the inspection cycle within 12 calendar months

3) *Turbopropeller-Powered Multiengine Airplane Inspection Programs.* Ensure that the maintenance records indicate that the owner/operator has identified and is using a selected program in accordance with GACAR § 91.449(f). Ensure that this system reflects the current airworthiness requirements for the individual airplane.

4) *Aircraft Records.* If the aircraft records are available, review them in accordance with Section 3 of this chapter.

12.5.3.15. TASK OUTCOMES.

A. Complete GAR.

B. Completion of this task can result in the following:

- Satisfactory inspection
- Communicate concerns/findings to the Office Manager
- Follow-up inspection for a particular discrepancy
- If compliance enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

12.5.3.17. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, other job tasks, and/or additional coordination is required between the Inspector and the Office Manager.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 5. PART 91 INSPECTIONS

Section 4. Sport Parachute Activities Surveillance

12.5.4.1. GACA ACTIVITY REPORT (GAR).

A. GAR 1696 (OP)

12.5.4.3. PURPOSE. This section contains information for aviation safety inspectors (Inspectors) conducting surveillance on aircraft involved in sport parachute jumping.

12.5.4.5. OPERATION OF AIRCRAFT WITH DOOR OFF OR MODIFIED FOR PARACHUTING OPERATIONS. Parachute operations that will involve the removal or modification of doors must obtain approval for these alterations under GACAR Part 21 (e.g. STC). It is the responsibility of the applicant to supply GACA with any data necessary to have his aircraft approved to operate with a door removed or a door modified to open/close in flight during jump operations.

NOTE: Operators should be advised that they can find information regarding specific FAA STCs for aircraft modified for skydiving operations by contact the United States Parachute Association (USPA) www.uspa.org.

12.5.4.7. SEATS AND RESTRAINT SYSTEMS. Not all seating and restraint system configurations used in jump aircraft provide the same level of safety in the event of an emergency landing. Further guidance on acceptable seat and restraint systems for parachute operations can be found in Appendix 3 of Federal Aviation Administration (FAA), Advisory Circular (AC) 105-2 (as amended). The following information presents key extracts from this FAA Advisory Circular:

- 1) Single stud quick release track fittings have been shown to release from the track at dynamic loads much lower than their rated strength. Dual stud quick release fittings do not exhibit this behavior in dynamic tests. Therefore, dual stud quick release fittings provide a much more reliable restraint anchorage than single stud fittings.
- 2) Lap belts are only effective if there is a solid support surface behind the occupant, such as a seat back, aircraft sidewall, or bulkhead. Otherwise, a tether restraint that attaches to

EBOOK VOLUME 12. SURVEILLANCE

the parachute harness provides more effective restraint.

3) Restraint for Aft-Facing Parachutists. Research has shown that to restrain aft-facing parachutists, the most effective point to attach a tether restraint to a parachute harness is at the junction of the leg straps, main lift web, and the horizontal back strap. The tether loop encircles the junction by passing between the main lift web and the horizontal back strap, and between the upper leg strap and the lower leg strap. One way to achieve this is to route the tether loop under the upper leg strap, then under the main lift web before latching the loop. Since these two components of the harness are easily assessable by the wearer, this attachment method should not be prone to misuse. It also provides more effective restraint than attaching at other points on the parachute harness since the restraining force is applied near the seated occupant's center of gravity (CG).

4) Restraint Belts or Tethers. Past experience and testing have shown the validity of attaching a restraint belt(s) or tether(s) to the parachute harness as part of the overall integrated restraint system. However, most if not all parachute harness configurations have not been tested to accept the load vectors that would be experienced during the actual use of this type of restraint configuration. Because of this, any parachute harness that has been subjected to actual use as part of an integrated restraint system must be removed from service and inspected by the manufacturer or a parachute rigger to determine the continued airworthiness of the parachute harness.

5) Conventional side-facing bench seats employing dual point lap belts are a superior means of carrying parachutists in aircraft large enough to accommodate them. They offer the advantages of being simple to use and can be designed to provide significant vertical energy absorption.

6) Rear-Facing Floor Seating. Restraints are more effective if attached to the floor instead of the sidewall. Only use sidewall attachments if floor attach points are not available. Effectiveness is increased if overall tether length is kept as short as possible, and the tether attachment to the aircraft is aft of the harness attachment point. Single point, single tether restraints are not very effective. Dual point, dual tether restraints offer superior restraint compared to single point, single tether restraints. This restraint method consist of two straps, each connecting the parachute harness to the aircraft floor on both sides of the parachutist.

7) Rear-Facing on Straddle Bench. Straddle benches can offer more occupant crash

EBOOK VOLUME 12. SURVEILLANCE

protection than floor seating since they can be designed to provide significant vertical energy absorption. As with floor seating, restraints are more effective if attached to the floor instead of the sidewall. Restraint effectiveness is improved if the tether strap is attached to the floor such that it is at an approximately 45-degree angle. Single point, single tether restraints are not very effective. Dual point, dual tether restraints offer superior restraint compared to single point, single tether restraints.

12.5.4.9. REFERENCES, FORMS, AND JOB AIDS.

A. References:

- GACAR Part 21, 91 and 105
- FAA AC 105-2 (as amended), Sport Parachuting.

12.5.4.11. PROCEDURES.

A. Inspectors should perform ramp inspections of aircraft used for sport parachute operations, paying particular attention to these factors which might contribute to accidents:

- Lack of use of a restraint system by each parachutist during flight
- Use of unapproved crew member safety belts
- Inadequate aircraft maintenance
- Contaminated fuel
- Inadequate training of pilots
- Pilot inattention to aircraft mass and balance
- Alterations that are not GACA-approved
- Removal of doors

Inspectors should ensure that operators conducting sport parachute jumping operations are familiar with and in compliance with aircraft operating limitations issued by the General Authority of Civil

EBOOK VOLUME 12. SURVEILLANCE

Aviation (GACA) as a condition for use of the aircraft for sport parachute jumping.

B. Debrief the Operator.

- 1) *Satisfactory.* Notify the operator of satisfactory inspection results.
- 2) *Satisfactory Inspection with Minor Discrepancies.* For a satisfactory inspection that revealed some discrepancies, debrief the operator and explain the problem areas. Make a note that there should be a follow-up inspection.
- 3) *Unsatisfactory Inspection.* Debrief the operator and/or pilot and explain the discrepancies. Refer to Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies for additional information.

C. Office File. Indicate a satisfactory or unsatisfactory surveillance of the sport parachute operator in the GACA office file.

D. Close GAR. Make appropriate GAR entries.

12.5.4.13. TASK OUTCOMES. Completion of this task results in one or more of the following.

- Indication to the office file of a satisfactory surveillance
- Indication to the office file of an unsatisfactory surveillance and that a follow-up inspection is required
- Corrective action of an identified safety deficiencies or non-compliances

12.5.4.15. FUTURE ACTIVITIES. Normal surveillance.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 6. PART 121 INSPECTIONS

Section 1. Evaluation of an Operator's Management of Significant Changes

12.6.1.1. OBJECTIVE. This section provides guidance for evaluating a General Authority of Civil Aviation Regulation (GACAR) Part 121 operator during significant changes in their operating environment that may affect the operator's ability to balance resources, size, and organizational structure with operational requirements. Examples of conditions that reflect these imbalances include:

- Financial distress
- Change in the scope and scale of operator operations (growth or downsizing)
- Mergers and Acquisitions

12.6.1.3. GENERAL. The air transportation environment is extremely complex and dynamic. Operators must continually seek a critical balance between markets, resources, and operations in order to remain viable. This leads to almost continuous change, with many periods of transition while these companies adapt to different arrangements for procuring and allocating resources and managing operations. During these transition periods, the operator may knowingly or unknowingly accept, or even generate, an undesirable level of safety risk. These transition periods place additional responsibility on General Authority of Civil Aviation (GACA) personnel to anticipate the potential risks, to evaluate the likelihood and severity of these risks, and to ensure that the operator is appropriately managing these risks consistent with the changing conditions.

A. Action. Managers, Principal Inspectors (PIs) and aviation safety inspectors (Inspectors) involved in the oversight of GACAR Part 121 operators must continuously evaluate an operator's ability to manage significant changes in its operating environment when indicated by the triggers described below and in accordance with the instructions in Figures 12.6.1.2 and Figure 12.6.1.3. The types of operating environment changes referred to in this section are caused by conditions that significantly alter the balance between resources and operations.

- Resources include the operator's ability to meet its financial obligations, the number of aircraft or fleet types it operates, its organizational structure, and/or the availability of key

EBOOK VOLUME 12. SURVEILLANCE

personnel and labor

- Operations include the ability of an operator's operations and maintenance organizations to meet the demands of the operator's flight schedule in a profitable way. Problems are more likely to occur when there are insufficient or improperly managed resources to meet operational requirements.

1) *Evaluation Process.* Paragraphs 12.6.1.5 through 12.6.1.13 outline a process for evaluation of an operator's management of significant change. Inspectors will use this process to help determine the need for further actions, including, the development of corrective action plans. Figures 12.6.1.2 and Figure 12.6.1.3 provide decision aids to help in the evaluation process.

2) *Information Sources and Triggers.* Office Managers, PIs and Inspectors should refer to the information in this section whenever they become aware, whether through formal notification or through informal channels, of conditions or indicators of changes in the operator's ability to balance resources and operational requirements. Examples of informal channels include information obtained from operator meetings or correspondence, conversations with knowledgeable operator personnel, press or industry publications, or any other credible sources that raise concerns about the operator's ability to balance resources and operational requirements. Whenever these conditions are evident or suspected, the assessment process outlined in paragraphs 12.6.1.5 through 12.6.1.13 should be completed.

3) *Operator Meetings.* PIs should participate in periodic meetings with their operator to stay informed on the operator's financial health and growth plans, or other conditions that might cause an imbalance between resources and operations. These periodic meetings are among the best informal sources of information about where the operator is headed. If information gathered in these meetings raises concerns over imbalances between resources and operations, GACA management will require the use of the evaluation process described in paragraphs 12.6.1.5 through 12.6.1.13.

4) *Indicators of Change.* GACA Inspectors, PIs and senior management must not wait for formal notification of a problem before taking action to identify potential risks. Often, the safety impact has already occurred by the time the problem is formally announced (e.g., declaration of bankruptcy). It is necessary to evaluate the potential for problems before such a formal declaration by reviewing leading indicators. Leading indicators are observable

EBOOK VOLUME 12. SURVEILLANCE

conditions or events which tend to exist before the inability to balance resources and operational requirements has occurred. By evaluating these leading indicators, it is possible to determine the potential for risk and to prompt the operator to take action to avert the safety impacts of the imbalance of resources and operational requirements.

a) Leading Indicators.

1. Leading indicators of such a condition could be significant changes in the competition along key routes or changes in costs or pricing policies. Leading indicators are those observations that may indicate that organizational changes are occurring but where readily observable problems may not yet have surfaced. The situations may not be problematic in and of themselves, but they may be sufficient reason for Inspectors to conduct more in-depth inquiries or conduct targeted surveillance.

2. Other examples of leading indicators include:

- Changes in support staff positions such as quality control, analysis, training development or middle management
- Change of more than one key management position e.g. Director of Operations, Director of Maintenance
- Departmental realignments or reorganizations
- Shifts in contractors or contractual arrangements
- Noticeable turnover of personnel
- Changes in experience, training, or proficiency of personnel

3. While any of these changes may be the result of normal courses of business, they could have impacts on procedures, lines of communication, organizational and supervisory controls, external and internal interfaces, and organizational cultures. Inspectors should, therefore, be aware of possible impacts on safety of operations.

b) Lagging Indicators.

EBOOK VOLUME 12. SURVEILLANCE

1. While leading indicators are preferable, sometimes such warning may not be available or may not be noticed. In that case, lagging indicators must be used. These are conditions or events that develop after the inability to balance resources and operational requirements has occurred.

2. Examples of lagging indicators include:

- Non-payment of debts or expenses
- Significant shifts in stock prices due to investor concerns
- Adverse changes in the credit rating of the operator
- Declaration of bankruptcy

3. When lagging indicators such as these occur, Inspectors should evaluate the overall operator's ability to mitigate the safety impacts of these changing conditions. Actions may include targeted surveillance or revalidation of affected programs.

c) General Stressors.

1. In some cases, the need to evaluate an operator's ability to manage change may not arise from a single trigger. Instead, a combination or series of events may place the operator in a stressed environment that could have safety impacts.

2. Examples of single events, that, in isolation or taken together, may indicate the potential for risk include:

- Difficult contract negotiations, work slowdown
- Merger/takeover, change in corporate structure, personnel, or culture
- Competition changes in key routes
- Changes or reductions in the workforce, significant layoffs or retirement buyouts

EBOOK VOLUME 12. SURVEILLANCE

- Changes in operational control systems
- Changes in program or subsystems that are part of the operational control system
- Continuing Analysis and Surveillance System (CASS) reveals a rising trend in deficiencies in the performance and effectiveness of inspection, maintenance, preventive maintenance, or alteration programs
- Revisions to operational procedures manuals
- Revisions to maintenance and inspection program procedures manuals
- Requests for changes in training programs
- Changes in aircraft equipment and/or parts inventories
- Reduction in route structure and/or flight schedules
- Reduction of line station and/or maintenance bases
- Changes in substantial maintenance contracts
- Increase in repeat maintenance logbook discrepancies
- Increases in short-term escalations
- Increase in the number of minimum equipment list (MEL) deferrals
- Increase in the number of requests for extensions to repair intervals in the operator's MEL
- Delays in meeting payrolls
- Increase in the frequency of complaints against the operator
- Media reports of an airline financial difficulty

EBOOK VOLUME 12. SURVEILLANCE

3. The above conditions include both leading and lagging indicators. While any single condition mentioned above may not produce the imbalance of resources and operational requirements discussed in this document, taken in combination they could lead to significant safety risks.

B. Assessments of Specific Conditions. Figures 12.6.1.2 and Figure 12.6.1.3 contain decision aids to assess the condition of operators with respect to financial distress and significant growth or downsizing. Personnel need to apply their own knowledge of the operator along with their assessment as to the prevalence and magnitude of the issues in the lists given in these figures. The decision aids are designed to assist in these assessments and subsequent action planning.

12.6.1.5. PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites (Inspector Qualifications).

- Experience with the involved operation
- Knowledge of the equipment involved

B. Coordination. This task requires coordination between the Office Manager, Principal Inspectors and Inspectors.

12.6.1.7. REFERENCES, FORMS, AND JOB AIDS.

A. References. GACAR Part 5, 119 and 121.

B. Forms. None.

C. Job Aids.

- Figure 12.6.1.1, Oversight of Change Management - Process Map
- Figure 12.6.1.2, Financial Condition Assessment Decision Aid
- Figure 12.6.1.3, Rapid Growth/Downsizing Assessment Decision Aid

12.6.1.9. ORGANIZATIONAL ASSESSMENT. This section provides guidance on when to require

EBOOK VOLUME 12. SURVEILLANCE

use of the Financial Condition Assessment Decision Aid and the Rapid Growth/Downsizing Assessment Decision Aid, and how to process the results of these tools. These decision aids will provide insight about the likelihood that an operator will experience safety risk due to the misalignment of resources and operational requirements as experienced during times of significant change. Financial distress and extraordinary growth or downsizings are examples of this type of change. This process is depicted in the process map in Figure 12.6.1.1.

12.6.1.11. RESPONSIBILITIES.

A. Directors. The Director, Flight Operations Division and the Director, Airworthiness Division are jointly responsible for maintaining an awareness of significant change management risks being experienced by operators, and for ensuring appropriate adjustments of GACA resources are made to address these risks.

B. Principal Inspectors (PIs). Principal Inspectors are responsible for deciding how to anticipate or respond to operator risks, and for identifying what information they need to make these decisions. When faced with a potential imbalance of operator resources and operational requirements, these participants must decide if there is a critical problem that must be handled immediately, and if these problems warrant adjustment of surveillance to allow the applicable Inspector to focus on the most critical risks. PIs should consider information from all credible/relevant sources.

C. Aviation Safety Inspectors (Inspectors). Inspectors assigned to support these decision-makers by providing insight into the operator's status and communicating their concerns to the decision-makers.

D. Operator. The operator is a participant in this process as the overseen entity, but also as potential source of information that could trigger the need to complete the evaluation process.

E. External Information Sources. This generic description covers a wide range of organizations or people that could provide information used to assess the degree of financial or other stress on an operator and to evaluate the operator's ability to manage change. External organizations could be anyone other than the involved office or the operator such as banks, creditors, commercial and government publications, commercial sources of financial data, government sources of safety data or any other entity that provides information to the office manager or PI about the status of the operator.

EBOOK VOLUME 12. SURVEILLANCE

12.6.1.13. PROCESS PROCEDURES.

A. Initiate Process. GACA management initiates the operator change management evaluation process based on the triggers listed below.

1) *Process Triggers.* There are four potential means of starting this process: leading indicators, lagging indicators, informal notification and formal notification. Each is described below.

a) **Leading/Lagging Indicators.** These indicators are detectable conditions that result from the imbalance of resources and operational requirements. Leading indicators are observable conditions or events that tend to exist before the inability to balance resources and operational requirements has occurred. Leading indicators provide some sort of advance notice that, if left unchecked, the imbalance is likely to occur. Examples of leading indicators include significant changes in the competition along key routes, changes in costs, or pricing policies. Lagging indicators are observable conditions or events that are detectable only after the imbalance condition has occurred. They may or may not indicate the presence of safety risks.

b) **Informal Notification.** Informal notification includes any non-formal notification that makes the GACA aware of the actual or potential imbalance of resources and operational requirements. Examples of informal notification may include information gathered at an operator meeting, discussion with operator personnel, articles in trade or government publications, etc. While not formal notification, these may oftentimes be more valuable since they can allow GACA to anticipate the imbalance condition and prompt the operator to take action before it leads to a safety risk.

c) **Formal Notification.** Formal notification is any legal or otherwise official notice that the operator is undergoing an imbalance between resources and operational requirements. Examples of this include declaration of bankruptcy, application for merger with or acquisition by another operator, request for modification to its operations specifications to allow the addition of new fleets or additional routes, etc. Typically, formal notification is too late to enable GACA to anticipate the potential for risk.

d) **Policy or Instructions.** Accomplishment of the Financial Condition Assessment Decision Aid and the Rapid Growth/Downsizing Assessment Decision Aid may be

EBOOK VOLUME 12. SURVEILLANCE

initiated by an order or request made by GACA management.

2) *Recognize Concern and Communicate Concerns.* Realization by PIs or Inspectors that an imbalance exists between resources and the operational requirements must be communicated to their Director immediately.

B. Use of the Financial Condition Assessment Decision Aid. Use the Financial Condition Assessment Decision Aid (Figure 12.6.1.2) to evaluate the degree of financial distress being experienced by the operator. The decision aid requires the user to match the operator's condition or characteristics with a series of word pictures that address several dimensions. Each dimension results in a score that, when taken together, produces a scoring range from low to high.

C. Use of the Rapid Growth/Downsizing Assessment Decision Aid. Use the Rapid Growth/Downsizing Assessment Decision Aid (Figure 12.6.1.3) to evaluate the degree of growth or downsizing being experienced by the operator. The decision aid requires the user to match the operator's condition or characteristics with a series of word pictures that address several dimensions. Each dimension results in a score that, when taken together, produces a scoring range from low to high.

D. Evaluate Decision Aid Assessment Scores. The score of the Financial Condition Assessment Decision Aid and/or the Rapid Growth/Downsizing Assessment Decision Aid reflects the relative degree of risk being experienced by the operator as a result of the imbalance between resources and operational requirements. Decision aid scores are used to determine the action to take to prompt the operator to manage the risk appropriately, and whether or not retargeting of surveillance is necessary to validate operator performance in identified areas of risk. If the decision aid score is high, a relatively low level of risk is indicated and the existing surveillance program should be continued. However, if particular areas of concern exist, then they must be addressed. A score in the moderate range indicates a moderate level of risk. A low score reflects a relatively high level of risk.

1) *Initiate Risk Management Plan (RMP), as applicable.* Decision aid scores indicating a high level of risk require initiation of a RMP that targets the specific risks generated by the imbalance of resources and operational requirements and creates an action plan. The action plan generated by the RMP will be tracked and closed by the PI.

2) *Retarget Surveillance.* Decision aid scores indicating a moderate level of risk require

EBOOK VOLUME 12. SURVEILLANCE

surveillance plans to be retargeted. A surveillance plan that concentrates on the elevated risk areas and that balances the need to validate performance in those areas against priorities for performance validation in other areas should be structured.

3) *Continue Current Surveillance Program.* Decision aid scores that indicate a low level of risk do not require any immediate actions, other than to continue the planned surveillance program to monitor the operator's condition and to address any particular issues of concern if they exist.

4) *Other Changes in the Operating Environment.* The Operator Change Management Assessment Process may be triggered by other changes that are not applicable to the Financial Condition Assessment or the Rapid Growth/Downsizing Assessment Decision Aids.

E. Reporting. Whenever the decision aids provided in Figure 12.6.1.2 or Figure 12.6.1.3 are used to evaluate the balance between an operator's resources and operational requirements, the following reporting procedures will be used:

1) The Director must notify the Vice President (VP) when they are informed of the use of the decision aids contained in Figure 12.6.1.2 or Figure 12.6.1.3 that resulted in a moderate or low score (i.e., the retargeting of resources or the initiation of a risk management plan).

2) Whenever the Director or PI complete the decision aids contained in Figure 12.6.1.2 or Figure 12.6.1.3, they must provide the following information to the VP:

- The indicators or set of general stressors that lead to completing the applicable decision aid
- The results of the decision aid, including the score that resulted from accomplishing the decision aid
- Any actions taken or planned to address any identified risks (take no action at this time, retarget, prepare an RMP, etc.)

12.6.1.15. TASK OUTCOMES. Recording of any findings pertaining to evaluations, assessments, and target surveillance associated with tracking conditions discussed in this section will be accomplished by following the established GACA process.

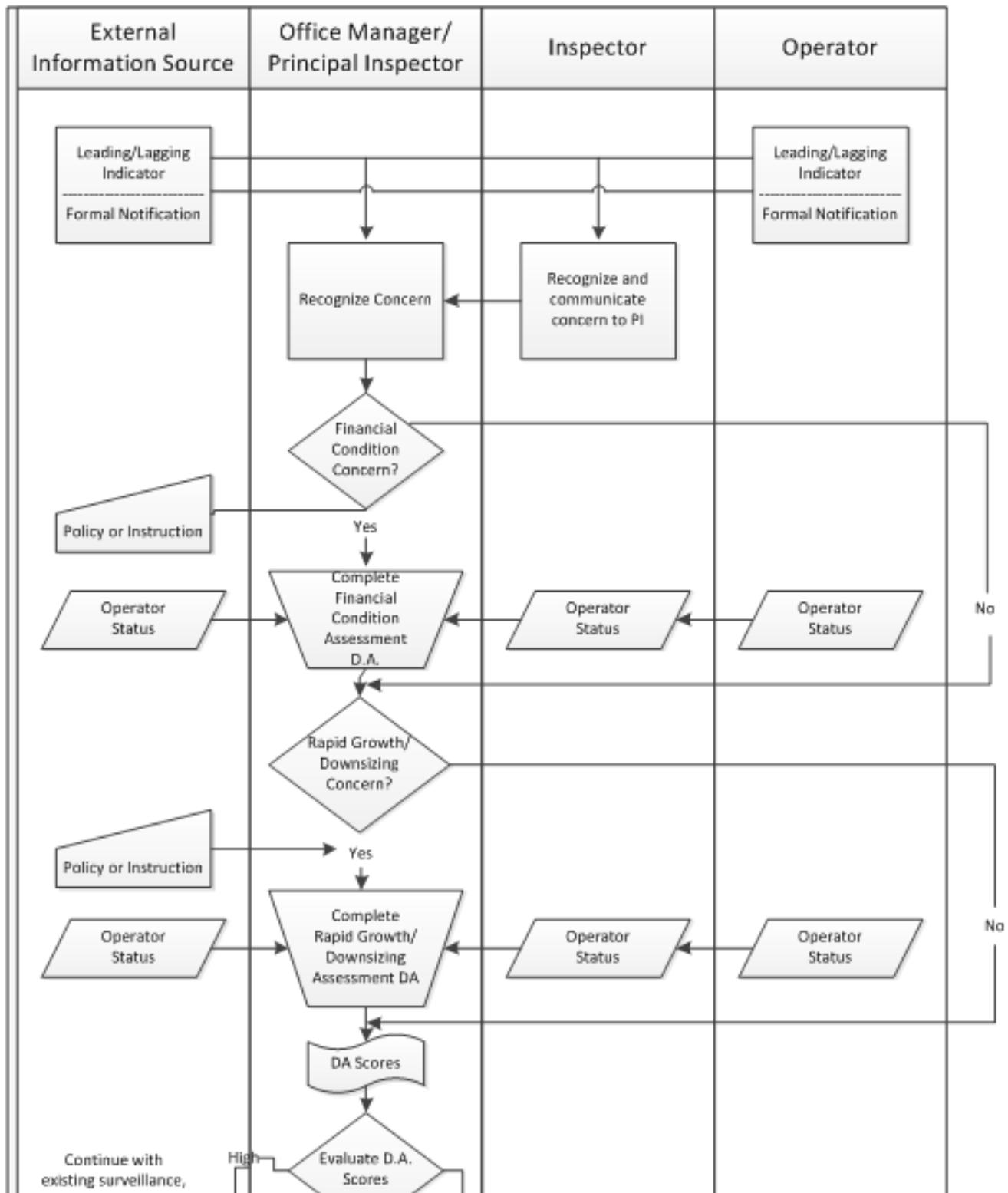
EBOOK VOLUME 12. SURVEILLANCE

12.6.1.17. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, other job tasks, and/or additional coordination is required between the Inspector and the applicable supervisor.

EBOOK VOLUME 12. SURVEILLANCE

Figure 12.6.1.1. Oversight of Change Management - Process Map

EBOOK VOLUME 12. SURVEILLANCE



EBOOK VOLUME 12. SURVEILLANCE

EBOOK VOLUME 12. SURVEILLANCE

Figure 12.6.1.2. Financial Condition Assessment Decision Aid

1. INTRODUCTION.

A. While there is no strict definition of “financial distress,” the following conditions or events may be indicators of financial problems in the company. Particularly where multiple indicators or multiple examples of single indicators are observed, Inspectors should consider more in-depth inquiries with operator management or targeted surveillance to determine possible impacts on affected programs or operator systems.

B. The Financial Condition Assessment Decision Aid evaluates the degree of financial distress being experienced by the operator. This Decision Aid asks the user to match the operator’s condition or characteristics with a series of word pictures that address several dimensions. Each dimension results in a score that when taken together produces scoring ranges that indicate the financial health of the operator.

2. INSTRUCTIONS. Rate each of the nine issues in Paragraphs A thru I below based on information available and your knowledge of the operator. Once all issues have been assessed, use the table in Paragraph 3 to determine the results of this assessment.

A. Financial Stability.

- 1) Deferment of discretionary spending (capital expenditure, training, advertising, etc.).
- 2) Sale of assets (spare parts, aircraft, lease back, etc.).
- 3) Loss of valuable suppliers.

EBOOK VOLUME 12. SURVEILLANCE

SCORE	WORD PICTURE
1–2	The operator is experiencing all three of the above financial stability issues.
3–5	The operator is experiencing two of the three above financial stability issues.
6–7	The operator is experiencing one of the three above financial stability issues.
8–9	The operator is NOT experiencing any of the three above financial stability issues.
10	The operator is financially stable.

B. Changes in Management, Turnover in Personnel, and Reduction in Workforce.

- 1) Significant reduction of executive management and/or new executive management qualifications and expertise.
- 2) Significant reduction of mid-level management and technical and support personnel (includes planners, auditors, engineers, training designers, analysts, accountants, programmers, quality assurance, etc.) and/or new mid-level management and technical and support personnel qualifications.
- 3) Significant reduction of other personnel (excluding executive management, mid-level management, technical and support personnel) and/or new other personnel (excluding executive management, mid-level management, technical and support personnel) qualifications and expertise.

EBOOK VOLUME 12. SURVEILLANCE

SCORE	WORD PICTURE
1–2	The operator is experiencing all three of the above changes.
3–5	The operator is experiencing two of the three changes.
6–7	The operator is experiencing one of the three changes.
8–9	The operator is not experiencing any of the three above changes.
10	The operator has a very stable workforce.

C. Other Areas Reflecting Change in the Operator Status.

- 1) Relationship between the operator and its labor organizations is declining.
- 2) The operator's load factor rate is decreasing.
- 3) The operator's dispatch reliability is declining.
- 4) The operator's cancellation and delay rates are increasing.
- 5) The operator's aircraft utilization rates are decreasing.
- 6) The operator's route structure maintenance including stations and facilities is of concern.

EBOOK VOLUME 12. SURVEILLANCE

SCORE	WORD PICTURE
1–2	The operator is experiencing five or more of the above issues.
3–5	The operator is experiencing three or four of the above issues.
6–7	The operator is experiencing one or two of the above issues.
8–9	The operator is NOT experiencing any of the seven above issues.
10	The operator is operationally very stable.

D. Safety Programs.

- 1) The operator's internal evaluation program is declining in its effectiveness.
- 2) The operator's safety systems, including risk management, are declining in effectiveness.
- 3) The operator's cooperative relationship with the Supervisory Inspector team is declining.

SCORE	WORD PICTURE
1–2	The operator is experiencing all three of the above issues and/or adequate safety programs do not exist.
3–5	The operator is experiencing two of the three above issues.
6–7	The operator is experiencing one of the three above issues.
8–9	The operator is NOT experiencing any of the three above issues.
10	The operator possesses stable safety programs.

E. Operator Programs.

- 1) The operator's maintenance inspection department/system is inadequately staffed and/or managed.

EBOOK VOLUME 12. SURVEILLANCE

- 2) The performance of the operator's maintenance of its CASS and/or performance monitoring system are declining.

SCORE	WORD PICTURE
1–2	The operator is experiencing both of the above issues.
3–5	A major concern exists about the operator regarding one of the above issues.
6–7	A concern exists about the operator regarding one of the above issues.
8–9	A minor concern exists about the operator regarding one of the above issues.
10	The operator's programs are stable.

F. Current Compliance Status.

- 1) The compliance culture of the operator is declining.
- 2) The number of complaints against the operator is increasing.
- 3) The number of regulatory enforcement actions is increasing.

SCORE	WORD PICTURE
1–2	The operator is experiencing four or five of the above issues.
3–5	The operator is experiencing two or three of the above issues.
6–7	The operator is experiencing one of above issues.
8–9	The operator is NOT experiencing any of the above issues.
10	The operator is compliant.

EBOOK VOLUME 12. SURVEILLANCE

G. Accidents/Incidents/Occurrences.

SCORE	WORD PICTURE
1-2	The number of accidents/incidents/occurrences the operator is experiencing is of high concern.
3-5	The number of accidents/incidents/occurrences the operator is experiencing is of moderate concern.
6-7	The number of accidents/incidents/occurrences the operator is experiencing is of low concern.
8-9	The number of accidents/incidents/occurrences the operator is experiencing is of no concern.
10	The operator has not experienced any accidents/incidents/occurrences.

H. Aircraft Acquisitions.

- 1) Significant or sudden fleet reduction.
- 2) The average age of the operator's fleet is high.
- 3) The number of fleets operated is high or increasing.
- 4) The operator's maintenance of lease aircraft is declining.
- 5) The operator is continuing to take delivery of new aircraft.

EBOOK VOLUME 12. SURVEILLANCE

SCORE	WORD PICTURE
1-2	The operator is experiencing five or more of the above issues.
3-5	The operator is experiencing three or four of the above issues.
6-7	The operator is experiencing one or two of the above issues.
8-9	The operator is NOT experiencing any of the above issues.
10	The operator's fleet is operationally stable.

I. Outsourcing.

- 1) The number and quality of substantial maintenance providers is of concern.
- 2) Outsourced flight crew training quality is of concern.
- 3) Outsourced cabin crew training quality is of concern.
- 4) Outsourced dispatcher training quality is of concern.
- 5) Outsourced maintenance personnel training quality is of concern.
- 6) Outsourced ramp/ground training quality is of concern.

SCORE	WORD PICTURE
1-2	The operator is experiencing five or more of the above issues.
3-5	The operator is experiencing three or four of the above issues.
6-7	The operator is experiencing one or two of the above issues.
8-9	The operator is NOT experiencing any of the six above issues.
10	The operator's outsourcing quality is acceptable and/or the operator is NOT outsourcing the above-mentioned functions.

EBOOK VOLUME 12. SURVEILLANCE

3. OVERALL SCORE. After all the questions have been answered, add all the scores to obtain the overall score. Using the table below, determine what actions are necessary to ensure adequate surveillance is being planned for the operator.

OVERALL SCORE	ACTIONS
9–45	The operator seems to have major financial distress issues. Begin a risk management process immediately and closely track all issues of concern.
46–71	The operator seems to have some financial distress issues.
72–90	The operator does not seem to have any substantial financial distress issues. However, if particular areas of concern exist, then those must be addressed.

EBOOK VOLUME 12. SURVEILLANCE

Figure 12.6.1.3. Rapid Growth/Downsizing Assessment Decision Aid

1. INTRODUCTION.

A. Operators may make adjustments in their fleets, personnel, or operations in the normal course of business, either in response to environmental necessities or to enhance their business posture. These are usually normal events in the course of healthy business. However, if organizational structures and support resources do not keep pace with the scope and tempo of operations, safety problems can occur. Whether operations are growing without additional support resources, or if resources are shrinking under an unchanging operational tempo, there may be a mismatch of resources to requirements. A mismatch of resources and requirements may also occur if rapid growth is occurring in certain areas of the operator's operation with simultaneous rapid downsizing in other areas. Particularly where multiple indicators or multiple examples of single indicators are observed, Inspectors should consider more in-depth inquiries with operator management or targeted surveillance to determine possible impacts on affected programs or operator systems.

B. This decision aid is used to evaluate the degree of change in the scope and scale of operator operations (growth or downsizing) being experienced by the operator. This decision aid asks the user to match the operator's condition or characteristics with a series of word pictures that address several dimensions. Each dimension results in a score that when taken together produces a scoring range from high to low.

2. INSTRUCTIONS. Rate each of the eight issues in Paragraphs A thru H below based on information available and your knowledge of the certificate holder. Keep in mind that the degree of change is being assessed. That change may be due to either growth or reduction, thus a low score could be assigned based on the high risk experienced because of significant growth or significant downsizing. Once all the issues have been assessed, use the table on the last page to determine the results of this assessment.

A. Changes in Fleet Size.

EBOOK VOLUME 12. SURVEILLANCE

SCORE	WORD PICTURE
1–2	The fleet size growth rate or reduction rate is significantly above the historical average.
3–5	The fleet size growth rate or reduction rate is above the historical average.
6–7	The fleet size growth rate or reduction rate is equal or comparable to the historical average.
8–9	The fleet size growth rate or reduction rate is below historical average.
10	The fleet size growth rate or reduction rate is significantly below historical average.

B. Changes in Aircraft Utilization.

SCORE	WORD PICTURE
1–2	The overall aircraft utilization is significantly above historical average.
3–5	The overall aircraft utilization is above historical average.
6–7	The overall aircraft utilization is equal or comparable to the historical average.
8–9	The overall aircraft utilization is below historical average.
10	The overall aircraft utilization is significantly below historical average.

C. Changes in Fleet Composition.

SCORE	WORD PICTURE
1–2	Changes to the fleet composition significantly increase the complexity.
3–5	Changes to the fleet composition increase the complexity.
6–7	Changes to the fleet composition do not affect the complexity.
8–9	Changes to the fleet composition decrease the complexity.
10	Changes to the fleet composition significantly decrease the complexity.

EBOOK VOLUME 12. SURVEILLANCE

D. Changes in Personnel.

SCORE	WORD PICTURE
1–2	The number of key employees (e.g., mechanics, supervisors, auditors) relative to fleet size is significantly less than the historical average.
3–5	The number of key employees (e.g., mechanics, supervisors, auditors) relative to fleet size is less than the historical average.
6–7	The number of key employees (e.g., mechanics, supervisors, auditors) relative to fleet size is equal or comparable to historical average.
8–9	The number of key employees (e.g., mechanics, supervisors, auditors) relative to fleet size is greater than the historical average.
10	The number of key employees (e.g., mechanics, supervisors, auditors) relative to fleet size is significantly greater than the historical average.

E. Changes in Route Structure (Domestic and International).

SCORE	WORD PICTURE
1–2	The change to the number of routes (growth or reduction) is significantly above historical average.
3–5	The change to the number of routes (growth or reduction) is above historical average.
6–7	The change to the number of routes (growth or reduction) is equal or comparable to historical average.
8–9	The change to the number of routes (growth or reduction) is below historical average.
10	The change to the number of routes is (growth or reduction) significantly below historical average.

F. Changes in Departure/Frequency (Domestic and International).

EBOOK VOLUME 12. SURVEILLANCE

SCORE	WORD PICTURE
1–2	The change to the number of departures (growth or reduction) is significantly above historical average.
3–5	The change to the number of departures (growth or reduction) is above historical average.
6–7	The change to the number of departures (growth or reduction) is equal or comparable to historical average.
8–9	The change to the number of departures (growth or reduction) is below historical average.
10	The change to the number of departures (growth or reduction) is significantly below historical average.

G. Maintenance and Ground Support.

- 1) Shortage of ground support equipment is of concern.
- 2) Increased MEL items or MEL extensions are of concern.
- 3) Increased use of short-term escalations is of concern.
- 4) Decreased aircraft dispatch reliability is of concern.
- 5) Increased maintenance delays are of concern.

EBOOK VOLUME 12. SURVEILLANCE

SCORE	WORD PICTURE
1–2	The operator is experiencing four or more of the above issues.
3–5	The operator is experiencing two or three of the above issues.
6–7	The operator is experiencing one or two of the above issues.
8–9	The operator is not experiencing any of the five above issues.
10	The operator's maintenance and ground support is very stable.

H. Resource Management.

- 1) Backlogged training and flight checks are of concern.
- 2) Delays due to crew availability are of concern.
- 3) Duty time and crew rest management are of concern.
- 4) Increased use of overtime is of concern.
- 5) Shortage of service personnel is of concern.
- 6) Inexperience of key personnel is of concern.

SCORE	WORD PICTURE
1–2	The operator is experiencing four or more of the above issues.
3–5	The operator is experiencing two or three of the above issues.
6–7	The operator is experiencing one or two of the above issues.
8–9	The operator is not experiencing any of the six above issues.
10	The operator's personnel resource management is acceptable.

EBOOK VOLUME 12. SURVEILLANCE

3. OVERALL SCORE. After all issues have been assessed, add the scores from each section to obtain the overall score. Using the table below, determine what actions are necessary to ensure adequate surveillance is being planned for the operator. Consider whether the most significant changes that factored into the scoring were due to rapid growth, downsizing, or simultaneous combination of both, in order to assist in identification of the change condition at the operator and subsequent determination of course of action.

SCORE	WORD PICTURE
8–39	The operator seems to have major rapid growth or downsizing issues. Begin a risk management process immediately and closely track all issues of concern.
40–54	The operator seems to have some rapid growth or downsizing issues
55–80	The operator does not seem to have any substantial rapid growth or downsizing issues. However, if particular areas of concern exist, then those must be addressed.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 6. PART 121 INSPECTIONS

Section 2. Pilot-In-Command (PIC) Operating Experience Observation for Part 121

12.6.2.1. GACA ACTIVITY REPORT (GAR).

A. 1356 (OP) (OE Observation)

B. 1645 (OP) (Check Pilot Surveillance)

12.6.2.3. GENERAL. This section contains direction and guidance to be used by aviation safety inspectors (Inspectors) for conducting operating experience (OE) observations as required by General Authority of Civil Aviation Regulation (GACAR) § 121.789. Inspectors must observe a pilot who is qualifying as a pilot in command (PIC) in an initial new-hire, initial equipment, or an upgrade curriculum which contains a simulator course of training. The Inspector must observe the pilot while the pilot is performing the prescribed duties of a PIC before serving unsupervised in revenue service. This observation is conducted while the candidate is acquiring OE and is only required before the pilot initially assumes command in GACAR Part 121 service. The purpose of this observation is to ensure that the transfer of learning from simulator to aircraft has occurred and that the candidate has acquired the skills and judgment necessary to effectively perform command responsibilities.

12.6.2.5. SCHEDULING POLICIES. The following policies apply to scheduling of PIC OE observations:

A. Scheduling Prerequisites. The Inspector observation is not the line check required by GACAR § 121.793; therefore, the Inspector does not have to observe a line check being administered by the check pilot. The preferred procedure for an Inspector is to observe the PIC's performance during the latter stages of OE. Earlier observation, though allowed, may result in a need for additional observation. The POI should coordinate with the operator for effective scheduling of OE observations to preclude the need for follow-up observations. Before assigning an Inspector to accomplish an observation, the supervising geographic Inspector shall obtain assurance from the operator that a candidate will be ready for observation.

12.6.2.7. PRACTICES AND PROCEDURES. The following practices and procedures shall be

EBOOK VOLUME 12. SURVEILLANCE

observed by Inspectors while observing PIC candidates.

A. Introduction. The Inspector shall meet the crew and gain access to the aircraft through the normal procedures for conducting en route inspection. In addition, the Inspector shall discuss the conduct of the flight with both the check pilot and the candidate and shall review the candidate's progress to date. During the discussion, the Inspector should ensure that the check pilot and the candidate understand the following information:

- 1) GACA recognizes that the check pilot is the PIC. The candidate, however, is expected to perform all of the duties of the PIC. The check pilot is expected to act as a qualified second-in-command (SIC) and, if necessary, as an instructor.
- 2) As the actual PIC, the check pilot is ultimately responsible for the safety of the flight. Should a situation arise that involves in-flight safety, the check pilot must take charge of the situation.

B. Conduct of the Observation. The Inspector who performs the observation should evaluate the items specified in Volume 6, Chapter 4, Section 1, Cockpit En Route Inspection for Parts 121, 125 and 135. The Inspector should be as unobtrusive as possible during the flight and avoid intruding into the interaction between crew members. The Inspector should not conduct oral examinations during the flight. Should an event occur that raises a question about the candidate's knowledge, the Inspector should take notes and make appropriate inquiries after the completion of the flight.

C. Postflight Procedures. After the flight, the check pilot and the Inspector should conduct a debriefing. The check pilot's comments are beneficial as the check pilot is more familiar with specific company procedures.

- 1) If the candidate's performance during the flight meets the required standards, the Inspector shall inform the candidate and the check pilot that the observation is complete. If the candidate's performance does not yet meet required standards, the Inspector shall indicate the areas in which the candidate's performance needs to improve and that another observation has to be made before the candidate can enter revenue service as a PIC. The Inspector should inform the candidate that, before the next observation, the candidate must receive further training, and a check pilot must again certify that the candidate is ready for the observation.

EBOOK VOLUME 12. SURVEILLANCE

2) If the Inspector has indicated to the candidate that the observation is incomplete, because the candidate's performance has not yet reached required standards, the Inspector should contact the principal operations inspector (POI) and provide a description of the candidate's performance so that the POI can take follow-up action.

12.6.2.9. TASK OUTCOMES.

A. Complete the GAR.

12.6.2.11. FUTURE ACTIVITIES. Based on findings, determine if increased check pilot surveillance or other job tasks are required.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 6. PART 121 INSPECTIONS

Section 3. Approved Reliability Program Inspection for Part 121

12.6.3.1. GACA ACTIVITY REPORT (GAR).

A. 3636 (AW)

12.6.3.3. OBJECTIVE. This section provides guidance for inspecting approved reliability programs. This inspection determines the operator's continued compliance with operations specifications, the approved reliability document, and the operator's maintenance procedures manual. The inspection is intended to ensure that the reliability program is effectively controlling the maintenance program.

12.6.3.5. GENERAL.

A. Definitions.

- 1) *Reliability Program:* A method to realistically and responsibly relate operating experience to established maintenance controls.
- 2) *Substantiating Data:* Records identified in the approved reliability document as containing information required to support changes in a maintenance program.
- 3) *Maintenance Program:* A program that includes inspection, overhaul, replacement of parts, preventive maintenance, repair and restoration, alterations, maintenance processes/tasks, and any other function performed by the maintenance/inspection department.

B. Operator Authority. An approved reliability program affords the operator the authority to revise maintenance in-service time limitations for overhauls, inspections, and checks of airframes, engines, propellers, components, appliances, and emergency equipment. The operator describes detailed procedures for revising these time limitations in its reliability program, which is approved by the President with OpSpec D74 or D75. General Authority of Civil Aviation (GACA) surveillance ensures that procedures are followed and are effective.

EBOOK VOLUME 12. SURVEILLANCE

12.6.3.7. INSPECTOR RESPONSIBILITIES. The principal maintenance inspector (PMI) must be alert at all times for possible non-compliance with the approved procedures. If it is found that the operator has failed to follow approved procedures, appropriate enforcement action must be taken. The PMI must notify the operator, in writing, that the procedures were not followed and indicate that the maintenance time limitations revisions are not acceptable.

12.6.3.9. COORDINATION REQUIREMENTS. This task may require coordination between the PMI assigned to the operator and other aviation safety inspectors (Inspectors).

12.6.3.11. REFERENCES, FORMS, AND JOB AIDS.

A. References:

- Applicable operations specifications (OpSpecs)
- Federal Aviation Administration (FAA) Advisory Circular (AC) 120-17 (as amended), Maintenance Control By Reliability Methods.
- Operator's reliability program document
- Operator's reliability reports
- Operator's maintenance manual procedures

B. Forms. GAR.

C. Job Aids. None.

12.6.3.13. PROCEDURES.

A. Review the OpSpecs. Review OpSpecs D74 and/or D75 to understand the scope, conditions, and limitations of the authorization. Ensure that the OpSpecs include all items controlled by the reliability program, to include the following:

- All aircraft
- Engines

EBOOK VOLUME 12. SURVEILLANCE

- Systems
- Components

B. Review the Reliability Document.

NOTE: It is recommended to develop a procedural flowchart to gain a better understanding of how the entire reliability program functions and how the systems interrelate. It should be used during on-site inspections of the reliability program.

- 1) Ensure that the reliability document is on file in the GACA Office.
- 2) Ensure that the reliability document has procedures for obtaining GACA approval before changing any of the following:
 - Performance standards
 - Data collection system
 - Data analysis system
 - Process(es)/task(s)
 - Procedures/organization for administering the program
 - Alert-type programs to non-alert programs or vice versa
 - Before adding or deleting aircraft or components/systems
- 3) Ensure that the reliability document includes a glossary of significant terms.
- 4) Review the data collection system.
 - a) Determine what operational data is used to measure the mechanical performance of the programs specified in the reliability document (aircraft, engines, appliances, systems and components, and/or structure). Examples include pilot reports, engine utilization, failure rates, shop findings, and structural inspection findings.

EBOOK VOLUME 12. SURVEILLANCE

- b) Identify forms used to collect operational data.
- c) Determine who has responsibility for compiling the data and routing it to the responsible person for review.
- d) Determine how the operator ensures operational data is accurate and factual.

NOTE: If engine condition monitoring is part of the reliability program, ensure that the input data and analysis of the data are timely and meaningful.

5) Review the data analysis system.

- a) Determine who is responsible for analyzing trend-related information. Trend-related information is analyzed by comparing data to established performance standards.
- b) Determine the criteria for conducting further analysis.
- c) Determine who will conduct any further analysis for corrective action (i.e., quality control or engineering).

6) Review procedures for instituting corrective action.

- a) Ensure that the reliability document describes the criteria that require further analysis to determine causal factors.
- b) Ensure that the reliability document describes definitive conditions when corrective action will take place.
- c) Determine who implements corrective action.
- d) Ensure that time limits are set for completing corrective action and that there is a chain of authority for carrying out the corrective action.
- e) Determine if follow-up procedures exist to ensure that the corrective action was effective.

7) Review performance standards.

EBOOK VOLUME 12. SURVEILLANCE

- a) Determine who is responsible for establishing or revising performance standards.
 - b) Ensure that the reliability document contains the methods used to establish and revise performance standards.
 - c) Determine what periodic review the operator has established to ensure that the performance standard remains realistic.
 - d) Review data display and report requirements.
 - e) Determine if the reliability document provides for data displays (such as forms, reports, and graphs) that summarize the previous month's activities. The report must be in sufficient depth to enable the operator or the recipient of the report to evaluate the effectiveness of the total maintenance program.
 - f) Determine whether the reliability document has procedures for reporting continuing over-alert conditions and the status of ongoing corrective action.
 - g) Review maintenance intervals and process/task change procedures.
 - h) Identify the organizational element responsible for approving changes to the maintenance program.
 - i) Ascertain the criteria used to substantiate each revision.
 - j) Review the method of distributing and implementing changes to the maintenance program (for example, job cards, shop manuals, etc.).
 - k) Review established escalation limitations.
 - l) Identify established procedures for changing the maintenance process/task.
- 8) Review reliability program revision procedures.
- a) Ensure that there are procedures for program revisions and that items requiring formal GACA approval are clearly identified.
 - b) Review method of distributing changes to the reliability document.

EBOOK VOLUME 12. SURVEILLANCE

C. Review the Maintenance Manual Sections Referenced in the Reliability Document.

D. Review the GACA Office Files.

- 1) Review any substantiating data to support all changes produced by the reliability program. Ensure that the changed procedures defined in the program are being followed.
- 2) Review previous inspection reports, correspondence, and other documents in the office files to determine if there are open items or if any areas were identified requiring special attention.

E. Review the Operator's Reliability Reports . This information may display the current fleet status, information about any system that has exceeded the performance standards, and any corrective action.

- 1) Ensure that the reliability report required by the document has been submitted to the PMI and reflects all aircraft, engines, systems, and components controlled by the program. Reports must specify the items exceeding established performance standards and the corrective action being taken.
- 2) Identify trends by reviewing reliability reports for the previous six months. Determine the effectiveness of the corrective actions. Highlight areas with decreasing reliability characteristics for follow up during on-site inspection.
- 3) Review Mechanical Interruption Summary Reports (MISR), Mechanical Interruption Summaries (MIS), and Engine Utilization Reports if these reports are not included in the reliability document. Analyze reports for the previous six months to identify trends. Ensure that the reliability program has also identified these trends.

F. Document Findings. After reviewing all operator data, and before coordination, ensure that any confusing areas, obvious omissions, or apparent discrepancies are documented.

G. Contact the Operator to Schedule An On-site Inspection. Advise the operator of the scope of the inspection. Confirm the inspection date in writing to ensure that the operator's personnel are available.

H. Brief the Operator's Personnel . Advise personnel of the scope and detail of the inspection.

EBOOK VOLUME 12. SURVEILLANCE

I. Compare the Operator's Documents and GACA Copies. Compare operator's operations specifications and reliability document to the GACA copies to ensure that dates and revision numbers agree.

J. Evaluate the Organization. Compare the actual organizational structure and personnel duties and responsibilities with the requirements in the approved reliability document.

NOTE: Until all the elements of the reliability program are inspected, the effectiveness of the organization cannot be determined. Inspection findings may be a direct result of organizational problems (for example, unqualified personnel or personnel not following procedures).

K. Evaluate the Effectiveness of the Reliability Program.

1) *Data collection system.*

- a) Determine if the data collection system in the reliability document is used in day-to-day operations and if the data collected is accurate and useful for controlling the maintenance program.
- b) Ensure that all necessary data is being collected and reported on the forms identified in the reliability document.
- c) Ensure that data collection duties are carried out by the personnel identified in the reliability document.
- d) Ensure that data is being routed to the proper organizational element for review.
- e) Ensure that data is routed to the proper organizational element in a timely manner by comparing the operational data's initiation dates, receipt dates, and final incorporation dates.
- f) Ensure that data accuracy by comparing original operational data documents to the information collected by the reliability program. Reliability programs collect different types of operational data, such as pilot reports by International Air Transportation Association (IATA) chapter, component removal rates by IATA chapter: engine shutdown rates, etc.

EBOOK VOLUME 12. SURVEILLANCE

- g) Ensure that the data is complete. Compare operational data documents with the required procedures in the maintenance manual or reliability document.
- h) Ensure that the data collected is relevant to the maintenance program and can accurately predict changes to, and determine effectiveness of, the maintenance program.

2) *Analyzed data.*

- a) Review the items identified as exceeding performance standards and requiring analysis. Determine if the analysis of these items has been accomplished according to the reliability document.

- b) Check records to verify the required analysis was performed.

3) *Corrective action system.* Corrective action is a result of the data analysis. Corrective actions usually are accomplished through product improvement, procedures improvement, time limitation revision, etc. Once authorized, the corrective action becomes mandatory.

- a) Determine if an attempt was made to find the cause of all identified areas that exceeded performance standards. Review records to verify the attempt. Determine if the attempt was made by the appropriate personnel (for example, powerplant problems assigned to propulsion engineering).

- b) If a cause was not identified, determine if the procedures specified in the reliability document for this situation were followed.

- c) If the cause was identified, determine if corrective action was initiated in accordance with the reliability document.

- d) Ensure that the corrective action was performed through the chain of authority described in the reliability document.

- e) Determine if the persons responsible for executing corrective actions were notified.

- f) Determine if the time limits in the reliability document for the completing corrective action were met.

- g) Determine if follow-up procedures outlined in the reliability document were

EBOOK VOLUME 12. SURVEILLANCE

followed to ensure that corrective actions taken were effective.

NOTE: A corrective action is considered effective if the out-of-limit condition is brought back to an acceptable level of performance.

4) *Performance standards system.*

- a) Examine a cross-section of performance standards revisions to ensure that they were accomplished according to the reliability document.
- b) Determine if performance standards were revised by the personnel specified in the reliability document.
- c) Check records to verify that performance standards are reviewed periodically.
- d) Review data display. Identify possible performance standards that are not responsive or sensitive enough to reflect changes in actual performance. For example, a data display that shows almost no change could indicate that the performance standards are not sensitive or responsive.

5) *Data display and reports.*

- a) Ensure that data displays and reports cited in the reliability report are being used.
- b) Ensure that data displays and reports highlight systems that exceeded the established performance standards and include proposed corrective actions.
- c) Determine whether continuing over-alert conditions are carried forward from previous reports and provide the status of ongoing corrective action.

6) *Maintenance intervals and process/task changes.* Review operator's file of all maintenance program revisions. Select a representative sample to determine compliance with the revision section of the reliability document.

- a) Ensure that revisions were authorized by the organizational element identified in the reliability document.
- b) Ensure that all maintenance program revisions were based on the criteria in the

EBOOK VOLUME 12. SURVEILLANCE

reliability document and include the specified substantiating data.

- c) Determine if the operator exceeded the escalation limitations in the reliability document.
- d) Determine if all required changes to the maintenance program were distributed and implemented. Review documentation to determine if changes are distributed and implemented using methods in reliability document.

7) *Reliability program revision system.* Ensure that formal GACA approval was obtained before implementing changes to any of the following:

- Performance standards
- Data collection system
- Data analysis system
- Process(es)/task(s)
- Procedures/organization concerning program administration
- Alert-type programs to non-alert programs or vice versa
- Adding or deleting aircraft, components or systems.

L. Review Records and Reports. Determine if records and reports are prepared and processed in accordance with the reliability document.

M. Evaluate Short-term Escalation Program, If Authorized.

N. Assess Findings. Evaluate inspection findings to get an overall picture of how well the reliability program controls the maintenance program.

1) Determine if there has been an increase in any of the following:

- Aircraft delays

EBOOK VOLUME 12. SURVEILLANCE

- Premature component removal rates
- The engine shutdown rates
- Inspection scheduling adjustments (short term escalations)
- Deferred maintenance or minimum equipment list items
- Pilot reports
- Aircraft inspection findings

NOTE: If any of the above circumstances are present, it could indicate the reliability program is not properly controlling the maintenance program.

- 2) If there is a problem with the reliability program based on inspection findings or any of the above circumstances, accomplish the following:
 - a) Determine if the deficiencies were a result of the organizational structure, lines of authority, staffing, personnel qualifications, or other problems related to the organization
 - b) Determine if deficiencies were due to incomplete or ineffective methods and/or procedures in the overall program
- 3) Identify findings that are contrary to the approved reliability program.
- 4) Identify all findings that are in compliance with the document but are still not producing satisfactory results.
- 5) Consult with the appropriate supervisory personnel to determine if any findings require enforcement actions.

O. Debrief Operator.

- 1) Meet with operator to discuss discrepancies discovered during the inspection.
- 2) Agree to corrective action to be taken by the operator. Advise the operator that a plan,

EBOOK VOLUME 12. SURVEILLANCE

including a schedule, must be submitted for completing the corrective action. If mitigating circumstances arise, the schedule can be renegotiated.

P. Process Enforcement Action. Inspectors must be alert at all times for possible non-compliance with the approved procedures. If it is found that the operator failed to follow approved procedures, appropriate enforcement action must be taken.

12.6.3.15. TASK OUTCOMES.

- A. Complete the GAR
- B. If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Safety Deficiencies

12.6.3.17. FUTURE ACTIVITIES.

Based on inspection findings, determine if increased surveillance, additional enforcement or other job tasks are required.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 6. PART 121 INSPECTIONS

Section 4. Extended Operations (ETOPS) Inspection for Part 121

12.6.4.1. GAR ACTIVITY REPORT (GAR).

A. 1634 (OP)

B. 4633 (AW)

12.6.4.3. OBJECTIVE. This section describes the process of monitoring a General Authority of Civil Aviation Regulation (GACAR) Part 121 operator authorized for Extended Operations (ETOPS) under GACAR§ 121.81 and Part 121, Appendix E. The objective of ETOPS surveillance is to ensure that the operator continually maintains the highest possible level of safety in its ETOPS operation.

NOTE: For additional detailed information on an acceptable process for an Extended Operations (ETOPS) authorization, refer to Federal Aviation Administration (FAA) Advisory Circular (AC) 120-42, (as amended), Extended Operations (ETOPS and Polar Operations).

12.6.4.5. GENERAL. Extended range programs have a great potential for adverse safety impact if not properly administered and monitored. Therefore, aviation safety Inspectors (Inspector's) dealing with an ETOPS operator must place special emphasis on ETOPS surveillance activities. Daily oversight of the operator's ETOPS program is essential to ensure the continued high level of operational safety. Daily oversight in the form of reviewing event reports, adverse trends, pilot reports, etc., will lead to constant process improvement that can only be achieved if good communications exist between the ETOPS operator and the General Authority of Civil Aviation (GACA).

A. Surveillance Components. Surveillance should include scheduling, coordinating, and reviewing the following, as applicable:

- Trend analysis

EBOOK VOLUME 12. SURVEILLANCE

- Problem identification and resolution
- Implementation of corrective actions

1) In addition to the items required to be reported by sections GACAR § 121.1553, ETOPS surveillance should focus on the following areas and events:

- In-flight shut downs
- Diversions or turn backs
- Un-commanded power changes or surges
- Inability to control the engine or obtain desired power
- Problems in systems considered to have a fundamental influence on flight safety
- Failure to start the APU while airborne
- Un-commanded inflight shut-downs of the APU
- Any other event the Inspector considers detrimental to extended-range operations

2) Items/systems that are considered critical to ETOPS flight safety include the following:

- Electrical, including batteries
- Hydraulic
- Pneumatic
- Flight instrumentation
- Fuel
- Flight control
- Ice protection

EBOOK VOLUME 12. SURVEILLANCE

- Engine start and ignition
- Propulsion system instruments
- Navigation and communications
- Auxiliary power-units
- Air conditioning and pressurization
- Cargo fire suppression
- Emergency equipment
- Any other equipment that is required for extended range operations

3) The ETOPS-related event or problem reports must contain the following information

- The type of aircraft
- The registration marks of the aircraft
- The engine type and serial number
- The total time and cycles, including the last inspection or shop visit
- The total time since overhaul or inspection of the unit or the system affected
- The phase of flight, to include climb, cruise, and descent. Coordinate with operations Inspectors to acquire information such as speed, altitude, ambient temperatures, and atmospheric conditions during the event
- The location and length of the diversion or turn back
- Any corrective actions taken
- Any other information pertinent to the event

EBOOK VOLUME 12. SURVEILLANCE

B. Approved Maintenance Program Changes. Operator submitted maintenance program changes must meet the following criteria prior to approval:

- Changes must be submitted with supporting documentation
- Changes must enhance the program without deleting or degrading approved program elements

NOTE: Under no circumstances should the Inspector allow changes to be made to the Certification Maintenance Requirements (CMR) or Configuration Maintenance Procedures document (CMP) without prior approval from the Director, Airworthiness Division.

C. Trend Analysis.

1) Surveillance should be directed toward the identification and correction of adverse trends found during APU, airframes, and propulsion systems monitoring.

2) Other indications of adverse trends include the following:

- Repeat write-ups by the pilot
- The degradation of engine condition
- High fluid consumption rates
- The recurrence of deficient areas as identified by the operator's continuing analysis and surveillance program
- Any patterns of irregularities, overly frequent repairs, etc.

D. Reducing Diversion Times. When adverse trends and/or maintenance problems have been detected, a re-evaluation of the operator's program should be performed.

1) This re-evaluation should be performed by the operator and the applicable Inspector. Inspectors may wish to consult with the Civil Aviation Authority (CAA) of the State of Design and their Propulsion System Reliability Assessment Board (PSRAB), or equivalent.

EBOOK VOLUME 12. SURVEILLANCE

- 2) Based on the results of the reevaluation, the Inspector will make a written recommendation to be submitted to the Director, Airworthiness Division.

E. Reinstating Diversion Times. In order to reinstate an operator's diversion times the operator must first develop and submit a Corrective Action Plan to the Inspector.

- 1) When reviewing the operator-submitted Corrective Action Plan, the Inspector should compare the Corrective Action Plan to the recommendations set forth in the Evaluation Report. The Inspector should cooperate with the operator during the development of the Corrective Action Plan but should not become involved in the actual writing of the plan.
- 2) Upon operator initiation of the corrective actions, the Inspector must perform specific surveillance of those corrective actions in addition to the normal surveillance of the ETOPS program.
 - a) After a minimum of 6 months of additional surveillance the Inspector must perform an in-depth audit to verify the effectiveness of the corrective actions.
 - b) When the Inspector is satisfied that the problems have been solved, a recommendation can be made to the Director, Airworthiness Division for reinstatement or adjustment of the diversion times. For example, a suspended diversion time of 180 minutes could be reinstated to 120 minutes.

F. Phases of Oversight. There are generally two distinct phases of ETOPS oversight. They are:

- 1) Initial Period. The initial period usually encompasses a heightened period of surveillance during the first 6 months after an operator receives its ETOPS authorization. This is further broken down into two 3-month segments.
 - a) The first segment is a period of time where the GACA and the operator evaluate the new ETOPS programs in action. This is the "wring out" phase to identify any program weaknesses or potential problem areas missed during the validation process.
 - b) The second segment of time is used to address issues found in the first segment. The operator and the GACA make adjustments or fine-tune the ETOPS programs. This ensures the operator consistently meets the requirements of the applicable rules, and the objective of ensuring the highest possible level of safety in the operator's ETOPS

EBOOK VOLUME 12. SURVEILLANCE

operation.

NOTE: During the first 6 months of ETOPS operations, many newly authorized ETOPS operators request additional ETOPS authority, such as an increase from 120 minutes to 180 minutes and/or the addition of new areas of ETOPS operation. Such requests illustrate another reason why the heightened surveillance period is particularly important.

2) Normal Surveillance. Normal surveillance follows the initial period. During normal surveillance, Inspectors must ensure that the operator maintains their ETOPS program in accordance with the authorizations granted and continues to follow the policies and procedures contained in their program, including any revisions. Normal surveillance also includes required ETOPS reporting, which is discussed later in this section.

G. Types of Oversight. There are two types of oversight:

1) Proactive Oversight. Proactive oversight focuses on prevention. It should include observation of actual ETOPS operations as they are being conducted, as well as a thorough review of the operator's ETOPS policies, procedures, documents, and manuals for deficiencies. In addition, ETOPS reports, flight records, training, facilities, and human factors should all be evaluated whenever possible. The focus here is prevention by actively and constantly looking for latent hazards that may exist in the ETOPS programs or in the organization.

2) Reactive Oversight. This typically occurs after the fact when an ETOPS event has already occurred. Although not all-inclusive, these events can include: an in-flight shut down (IFSD) of an engine, diversions, turn backs, lack of an auxiliary power unit (APU) in-flight start reliability, and ETOPS significant systems reliability. In reactive oversight, a review and analysis of ETOPS event reports is conducted to determine the root cause of an event and to ensure that the operator has taken appropriate corrective action.

12.6.4.7. OPERATIONS OVERSIGHT. In addition to the requirements of FAA AC 120-42 (as amended), the emphasis areas listed in Volume 5, Chapter 5, Section 1, for ETOPS validation flights are also applicable for flight operations surveillance and oversight. Additionally, the GACA should ensure that the operator is adhering to the time limitations authorized in their ETOPS operations specification (OpSpec) B42.

12.6.4.9. MAINTENANCE OVERSIGHT. Due to the critical nature of maintenance on an

EBOOK VOLUME 12. SURVEILLANCE

operator's ETOPS program and its relationship to safety, special emphasis should be placed on surveillance of the authorized ETOPS maintenance program.

A. The Intent of ETOPS. The intent of ETOPS is to preclude a diversion and (if it does occur) to have programs in place to protect that diversion. Inspectors should ensure that the ETOPS operator follows their ETOPS maintenance programs as outlined in the maintenance manual sections referenced in the OpSpec. Inspectors should closely monitor any revisions to the operator's programs that could adversely affect the ETOPS program.

B. ETOPS Culture. Oversight should include confirmation of a positive ETOPS culture at all levels of the organization. Surveillance and oversight will provide evidence that the corporate culture and infrastructure to support the ETOPS operation continues to exist and is functioning properly. Additionally, surveillance will ensure the maintenance program continues to provide safe ETOPS operations.

NOTE: If the ETOPS operator's Continuing Analysis and Surveillance System (CASS) is marginal, ETOPS program degradation may be required.

12.6.4.11. ETOPS REPORTING. Normally, the Principal Inspector (PI) accomplishes ETOPS monitoring through surveillance and by collecting and tracking significant ETOPS events with his operator as well as ETOPS-related operational and maintenance data.

A. Reporting an ETOPS Event.

1) GACAR § 121.1559(b) contains the reporting requirements for an ETOPS operator to report to the GACA all ETOPS-related anomalies and inflight occurrences on their ETOPS airplanes (regardless of ETOPS or non-ETOPS operation), and specifies the time constraints for submission of such reports. The following events should be the focus of Inspector monitoring of the information in these operator ETOPS reports:

- a) IFSDs (except planned IFSDs performed for flight training).
- b) Diversions (including time) and turn backs for failures, malfunctions, or defects associated with any ETOPS significant systems.
- c) Un-commanded power or thrust changes or surges.

EBOOK VOLUME 12. SURVEILLANCE

- d) Inability to control the engine or obtain desired power or thrust.
- e) Inadvertent fuel loss, unavailability, or uncorrectable fuel imbalance in flight.
- f) Failures, malfunctions, or defects associated with ETOPS significant systems.
- g) Any event that would jeopardize the safe flight and landing of the airplane on an ETOPS flight.

NOTE: If an event occurs on an ETOPS airplane during a non-ETOPS flight, the operator has an obligation to report this event even though it was not an ETOPS flight. The key here is that because it is an ETOPS airplane, it is still a reportable event.

B. ETOPS Normal Reporting. In addition to the 96-hour requirements, the ETOPS operator is also responsible to submit a comprehensive summary report to the GACA on a schedule found satisfactory to the President (see GACAR § 121.1559(a) for the requirements and frequency of these periodic reports). FAA AC 120-42 (as amended) contains additional information on the reporting of ETOPS-related systems, anomalies, and inflight occurrences. The GACA should track the following information (received from each ETOPS operator) on a periodic basis determined by the President so as to monitor the ETOPS operational posture of each ETOPS operator:

- Summaries of IFSD rate—12-month rolling average
- Delays and cancellations related to the ETOPS event
- Number of ground events; i.e., aborted takeoff, power shortfall or loss, and unscheduled engine removals
- Number of events; i.e., APU failed to start, or failed in use, while intended for ETOPS or during an ETOPS event

NOTE: This information is collected by the GACA from the information submitted by each ETOPS operator and once compiled and analyzed, can serve as a surveillance monitoring tool.

C. ETOPS Reporting Requirements Summarized.

- 1) ETOPS Events. The ETOPS operator reports ETOPS events within the time established

EBOOK VOLUME 12. SURVEILLANCE

by the GACA.

- 2) Normal Reporting. Normal reporting by ETOPS operators to the GACA is through submission of a comprehensive periodic report.

12.6.4.13. ETOPS NORMAL MAINTENANCE SURVEILLANCE.

A. Operator's Manual. In addition to the processes and procedures required to conduct ETOPS, the operator's manual should also represent the operator's ETOPS philosophy and define its infrastructure. These elements should be evident at all levels of the company. The overall intent is to preclude and protect an inflight diversion, should one occur. (See GACAR § 121.671)

B. Observation. Each of the ETOPS maintenance requirements described below should be evaluated against the applicable rule requirements and the guidance described in FAA AC 120-42. To this end, the Inspector should ensure that the ETOPS maintenance program contains at least the following supplemental programs:

NOTE: The following paragraphs provide a brief description of the ETOPS supplemental requirements. For complete details of the required ETOPS Continuous Airworthiness Maintenance Program (CAMP) and its supplemental programs, consult GACAR § 121.671 and FAA AC 120-42 (as amended). It is imperative that Inspectors understand that the information provided below is only an overview. It is absolutely essential that the applicable rules and ACs are reviewed prior to evaluation of these activities for initial ETOPS authorization and for ongoing ETOPS oversight.

NOTE: An important prerequisite to an operator's ETOPS Continuous Airworthiness Program (CAMP) is to first ensure that the operator's non-ETOPS CAMP is capable of supporting the ETOPS supplemental elements. Specifically, does the basic CAMP contain the maintenance and inspection program's Instructions for Continued Airworthiness (ICAs) necessary to support an ETOPS operation?

- 1) *ETOPS Maintenance Document.* The ETOPS maintenance document(s) must reflect the actual policies and procedures that the operator expects their ETOPS maintenance personnel to adhere to accomplish the required ETOPS program elements. The document(s) should be user-friendly and accessible to all affected personnel.

EBOOK VOLUME 12. SURVEILLANCE

2) *Procedural Changes.* The operator's ETOPS maintenance document must contain procedures to gain approval from the GACA for any changes to its ETOPS maintenance procedures. These procedures should ensure that changes are submitted to the GACA in a timely manner. This will allow the GACA time for review before the operator attempts to incorporate the change into its ETOPS document.

NOTE: Each revision or procedural change to the ETOPS maintenance documents will require a revision to the operator's OpSpec D86. The GACA must receive and approve all revisions or procedural changes to the ETOPS program. The operator must receive a new OpSpec D86 that reflects the new ETOPS maintenance document date prior to implementation.

3) *Pre-Departure Service Check.* The operator must have a specific ETOPS pre-departure service check to verify that the airplane and certain significant items are airworthy and ETOPS-capable immediately before every ETOPS flight. In this case, one should generally accept the word "immediately" to mean "2 to 4 hours" prior to departure on each ETOPS flight segment. Each operator's pre-departure service check may vary in form and content. The specific operator's needs should drive the content and suitability for an acceptable pre-departure service check. FAA AC 120-42 (as amended) establishes specific qualification requirements for the mechanic or individual who completes the pre-departure service check.

4) *Dual Maintenance.* The operator should establish procedures that minimize scheduling of dual maintenance actions to similar elements in any ETOPS significant system during the same routine or non-routine maintenance visit. In order to manage this requirement, the operator must develop a list of fleet-specific ETOPS significant systems and include them in their ETOPS maintenance document(s). The operator should include a clear definition of what constitutes dual maintenance in their ETOPS maintenance document. In the event that the operator performs dual maintenance, their procedures must ensure the verification of positive corrective action prior to entry into ETOPS airspace. The procedures must ensure that such maintenance actions are performed by a different qualified technician, or if performed by the same technician, then he or she must be under the direct supervision of a second qualified individual. In either case, a qualified individual must conduct a ground verification test and ensure that any in-flight test that is required by the operator be done as well. In addition to first performing ground verification, an operator may choose to conduct a functional check flight after a heavy maintenance visit to address dual maintenance actions.

EBOOK VOLUME 12. SURVEILLANCE

5) *Verification Program.* The operator must establish a verification program to verify corrective actions on ETOPS significant systems. The operator must have procedures that prevent an airplane from being dispatched for ETOPS (after propulsion system shutdown, any primary system failure, or significant adverse trends on a previous flight) unless appropriate corrective action has been taken. Anytime a positive corrective action is not verifiable for any reason on the ground (could not duplicate malfunction, etc.), an in-flight verification should be made.

- a) Operators with authority to conduct ETOPS must have ground and in-flight verification flight procedures described in their supplemental ETOPS maintenance program for events involving propulsion system shutdown, engine or major engine module change, primary system failure, and for certain adverse trends or prescribed events.
- b) It is permissible to designate the period of time from airport departure to entry into the ETOPS environment as a maintenance verification flight, in combination with a regularly scheduled ETOPS revenue flight, provided the verification phase is found satisfactory prior to reaching the ETOPS Entry Point (EEP). It is important to note when the operator conducts this type of ETOPS verification flight that:
 - Written procedures exist to ensure that the flight crew receives a full briefing prior to dispatch concerning the event and/or the maintenance performed
 - Appropriate maintenance personnel should convey to the flight crew the specific observations and/or actions required of them during the verification portion of the flight, as well as the method used to properly record the satisfactory completion of that verification flight
 - All ETOPS verification-related flight crew observations and/or actions must be completed prior to entering the ETOPS portion of the flight
 - Communications with the dispatch center and maintenance control indicating a verification pass/fail, and an appropriate logbook entry must be completed in accordance with the operator's ETOPS maintenance document documenting the verification pass/fail

6) *ETOPS Task Identification.* The operator should identify all tasks that need to be

EBOOK VOLUME 12. SURVEILLANCE

completed and certified as complete by ETOPS-qualified maintenance personnel. The intent is to have ETOPS-trained maintenance personnel accomplish these tasks because they are related to ETOPS. If the operator does not specifically identify the tasks, an ETOPS-trained maintenance person must accomplish all maintenance tasks.

7) *Centralized Maintenance Control Procedures.* An operator conducting ETOPS (regardless of the size of its ETOPS fleet) should have a centralized entity responsible for oversight of the ETOPS maintenance operation. The operator should develop and clearly define in its ETOPS maintenance document specific procedures, duties, and responsibilities for involvement of their centralized maintenance control personnel in their ETOPS operation.

8) *ETOPS Parts Control.* The operator should have an ETOPS parts control program that ensures only parts approved for ETOPS are utilized to maintain the integrity of the systems that are unique to ETOPS. This program must include provisions to verify that parts placed on aircraft through parts borrowing and pooling agreements meet this requirement as well.

9) *Reliability Program/Enhanced Continuous Analysis and Surveillance System (ECASS).* Operators conducting ETOPS may modify their GACA-approved reliability program to include the ETOPS maintenance elements, or if they do not have a reliability program, the operator's existing CASS must be enhanced to include ETOPS elements. The operators should design their program primarily to prevent, identify, and correct problems. The program should incorporate reporting criteria for use by the operator and the GACA as a measure of ETOPS reliability. Regardless of which program the operator has, it should include the additional reporting procedures for significant events detrimental to ETOPS flights contained in GACAR § 121.671.

10) *Engine Condition Monitoring (ECM).* Per GACAR § 121.671, there is a requirement for operators who conduct ETOPS to have an ECM program. The operator should design this program to ensure their engines can continue to operate at maximum continuous thrust (MCT) for extended periods of time within operating limits, in the event single-engine operation is required because of an IFSD or failure of other powerplant systems. This program may be a recognized program from an engine manufacturer, a contractor, another airline, or it may be the operator's own program. Regardless of origin, the ECM program should provide a system for data collection and timely analysis to detect engine deterioration trends and preclude failure. The purpose of the program is to recognize and ensure timely correction of engine problems.

EBOOK VOLUME 12. SURVEILLANCE

11) *Propulsion System Monitoring.* GACAR § 121.671 requires operators who conduct ETOPS to have a propulsion system monitoring program to monitor and detect adverse trends in their propulsion systems. This program requires each operator to conduct an investigation into the cause of each IFSD and submit findings to the GACA. If the operator or the GACA determines that corrective action is necessary, the operator must implement a corrective action. The propulsion system monitoring program also contains a fleet average IFSD rate system. (See FAA AC 120-42 (as amended) for current IFSD calculations, values, and reporting requirements.)

- a) Operators may include the IFSD rate statistics of all engines that are configured for ETOPS (i.e., meet the Configuration Maintenance Procedures (CMP)). The operator must ensure these engines are maintained in that configuration and in accordance with the operator's ETOPS program. However, these engines (while installed on non-ETOPS aircraft) do not have to be maintained by ETOPS-qualified mechanics. Including non-ETOPS engines is advantageous to small fleet size operators to minimize the statistical impact. In order to qualify for this proviso, the operator must gain approval from the GACA.
- b) Prior to use of these engines on an ETOPS aircraft, an ETOPS-qualified mechanic must accomplish an inspection to ensure the engine still meets the operator's ETOPS configuration. While the engine is in ETOPS operation (installed on an aircraft listed in OpSpec D86), a qualified mechanic must accomplish all maintenance in accordance with the operator's approved ETOPS maintenance document.

12) *Oil Consumption Monitoring.* The oil consumption monitoring program must monitor oil consumption on a flight-by-flight basis, with verification of the oil system integrity made prior to each ETOPS leg. Although there is a flightdeck indication system for engine oil quantity, it is highly recommended that before ETOPS departure, the engine oil levels are physically checked at the engine using the sight gauge (if installed) or via the oil tank filler neck. The operator's program must include a process for reporting and analyzing oil consumption. The oil consumption monitoring program should be capable of tracking oil usage trends and recognizing a sudden spike in the oil consumption rate. If increased oil consumption is found, it must be corrected prior to release for ETOPS flight. Any corrective actions taken regarding oil consumption should be verified in accordance with the ground and in-flight verification process (as required) prior to entry into ETOPS. Additionally, if ETOPS operations require the APU, the oil consumption monitoring program must include

EBOOK VOLUME 12. SURVEILLANCE

it as well. If available, the APU oil level can be determined using the flightdeck oil quantity indication system.

13) *APU In-Flight Start Program.* The operator should have an APU in-flight start program for each applicable specific airframe/engine combination. The operator must ensure each airplane's APU is periodically sampled. Periodic sampling customarily begins with the operator sampling each APU every 30 days. After an agreed upon length of time with the GACA, if the sampling data confirms the reliability level consistently tracks at 95 percent or better, then the sampling intervals can be systematically escalated to no more than once every 120 days. APU in-flight starts should be made on flights of 4 hours or more and be subject to the following conditions:

- In-flight APU starts do not need to occur on ETOPS flights. The APU must be in the ETOPS configuration in accordance with the applicable CMP document in order to allow credit
- If in-flight APU starts occur on an ETOPS flight, the start should occur on the return leg to the Kingdom of Saudi Arabia (KSA)
- The start attempt should occur just before top of descent, or at such time that will ensure at least a 2-hour cold soak at altitudes that are representative of the ETOPS routes flown
- If the APU fails to start on the first attempt, subsequent start attempts may be made within the limits of the airframe and APU manufacturer design specifications
- If less than 95 percent of in-flight start reliability is achieved, question the operator's APU reliability. This may warrant a thorough review of the APU maintenance and reliability programs, including consideration for performing the task more often until positive corrective action is confirmed

NOTE: For some operators conducting ETOPS, the GACARs may not require an APU in-flight start program depending on the airplane/engine combination in question. Specifically, some APUs are required to be operational upon entering ETOPS airspace. Therefore, an APU in-flight start program is not required in such instances.

14) *Configuration Maintenance Procedures (CMP).* The CMP standard specifies any

EBOOK VOLUME 12. SURVEILLANCE

additional configuration, maintenance, or operational requirement, including non-optional Service Bulletins (SB), Service Letters (SL), and maintenance instructions that are uniquely applicable to ETOPS. This does not relieve the operator of the responsibility to review all additional SBs and SLs that are issued against the operator's fleet. The GACA and the respective FAA Aircraft Evaluation Group (AEG) establishes the requirements in the CMP at the time of initial ETOPS type design approval of the airplane/engine combination. Typically, the airplane manufacturer publishes and maintains the CMP document and the document includes identified CMP requirements. Although there is no requirement for the operator to update their configuration beyond the baseline CMP that was in effect at the time they received their ETOPS authorization (unless mandated by an Airworthiness Directive (AD)), PIs should ensure that operators have procedures in their manual to review applicable CMP documents for changes on a regular basis. PIs should encourage the operators to incorporate applicable changes to the CMP into their ETOPS program. To this end, ETOPS operators should have procedures in their manual to review applicable CMP documents for changes on a regular basis. The GACA may impose additional CMP requirements via the AD process.

15) *Maintenance Training.* The operator is responsible for ensuring that all maintenance personnel who perform maintenance on its ETOPS airplanes, including repair stations, vendors, and contract maintenance, have received adequate technical training for the specific airplane/engine combination it intends to operate in ETOPS. The maintenance training program should focus on ETOPS awareness for all personnel involved in the ETOPS program. The operator may include the maintenance training program in the normal maintenance training; but should emphasize the special nature of ETOPS maintenance requirements. For additional information, see FAA AC 120-42 (as amended) for more details concerning the ETOPS maintenance training program requirements.

C. Continuing Analysis and Surveillance System (CASS). The operator's normal CASS should receive supplements to require regular surveillance of the ETOPS program. The operator should use the program's analysis as a means to ensure the integrity of, and to adjust, their ETOPS programs. All ETOPS stations/facilities should be inspected at least every 3-years to ensure they continue to meet the requirements of the operator's ETOPS program. The 3-year requirement may be less due to risk assessment. The GACA should make every effort to schedule complementary inspections during the same station/facility visit. For example, also conduct contract maintenance, fuel facility, CAMP requirements, etc., as applicable.

12.6.4.15. COORDINATION REQUIREMENTS. This task requires coordination among

EBOOK VOLUME 12. SURVEILLANCE

Inspectors (airworthiness), PIs, GACA Managers/Supervisors and any inputs from the GACA Airworthiness Engineers, the CAA of the State of Design and the aircraft or engine manufacturer, as required.

12.6.4.17. REFERENCES, FORMS, AND JOB AIDS.

A. References.

- Operator's manuals
- Operations Specifications
- FAA AC 120-42 (as amended), Extended Operations (ETOPS and Polar Operations).

B. Forms. GAR.

C. Job Aids. None.

12.6.4.19. PROCEDURES.

A. Monitor the Operators Program. Ensure the following:

- 1) The approved extended-range maintenance programs are followed as outlined in the maintenance manual sections that are referenced in the operations specifications.
- 2) Operator-proposed changes to the approved extended-range maintenance program are submitted to the Inspector for review 60 days prior to implementation.

B. Submit Reports.

- 1) On a monthly basis, provide to the Inspector the following information:

- A summary of in-flight shut down rates
- Any delays or cancellations
- All ground events (aborted takeoff, power shortfall or loss, and unscheduled engine removals)

EBOOK VOLUME 12. SURVEILLANCE

2) Respond to special events by gathering the following information:

- Engine condition monitoring and oil condition monitoring program summaries
- Component removal failure summaries
- Pilot reports
- Any other information, as requested

C. Review Trend Analysis. Perform an immediate evaluation of the operator's program when any of the following occur:

- The propulsion system IFSD exceeds .05/1,000 engine hours for a 120-minute operation (based on a 12-month rolling average)
- The propulsion system IFSD exceeds .03/1,000 engine hours for a 180-minute operation (based on a 12-month rolling average)
- Any significant diversions occur due to airframe and/or powerplant induced discrepancies

NOTE: Consideration must be given to operators with small fleets due to the impact of a single event on the statistical rate. In these circumstances a review of the specific events will be more useful.

D. Reduce Diversion Times. When adverse trends and/or maintenance problems have been detected ensure that an immediate evaluation is performed by the operator and the .

E. Reinstate Diversion Times.

- 1) Review and, as appropriate, approve the operator-submitted Corrective Action Plan.
- 2) Schedule and conduct an in-depth audit of the ETOPS program corrective actions after a minimum of six months of additional surveillance.
- 3) Upon completion of the audit make the appropriate recommendation on the reinstatement or adjustment of the diversion times, in writing, to the Director, Flight Operations Division and Director, Airworthiness Division.

EBOOK VOLUME 12. SURVEILLANCE

12.6.4.21. TASK OUTCOMES. If enforcement action is required, follow the guidance found Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies.

12.6.4.23. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, other job tasks, and/or additional coordination is required between the Inspector and the applicable supervisor.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 6. PART 121 INSPECTIONS

Section 5. Detailed In-Process/Task Inspection of Essential Maintenance Providers for Part 121

12.6.5.1. GACA Activity Report (GAR).

A. 3640 (AW) (Contract Maintenance Facility Inspection)

B. 3651 (AW) (Detailed Process Inspection)

12.6.5.3. OBJECTIVE. This section provides guidance to General Authority of Civil Aviation Regulation (GACAR) aviation safety inspectors (Inspectors) responsible for conducting a detailed in-process/task inspection. Due to the size and scope of this inspection, it is recommended that a team of Inspectors be utilized to complete this task. Principal Inspectors with certificate management responsibilities for GACAR Part 121 operators should be represented on the inspection team.

12.6.5.5. GENERAL. The inspection will determine whether a GACAR Part 121 operator's outsourced maintenance programs, processes, and procedures are clear, concise, and easily followed. If functioning as designed, the procedures, controls, process measures, and interfaces should provide the desired results.

A. The team should provide a joint risk assessment, broken down by operator/repair station and notify the principal inspectors (PIs) (both GACAR Part 121 and 145) of any problems, findings, and corrections made during the inspection.

B. Guidance for evaluating operators Continuous Airworthiness Maintenance Program (CAMP) minimum requirements is located in Volume 4, Chapter 3, Section 1, Evaluate a Continuous Airworthiness Maintenance Program (CAMP).

C. Volume 4, Chapter 5, Section 1, Evaluate Outsource Maintenance Arrangement for Part 121, requires each operator to review, evaluate, accept/reject, and authorize the specific outsource maintenance provider (OMP) programs, practices, and procedures which are contained in the Repair Station Manual (RSM) and Quality Control Manual (QCM). The operator's manual system should contain the necessary instructions and procedures to ensure compliance with its CAMP.

EBOOK VOLUME 12. SURVEILLANCE

12.6.5.7. SCOPE.

- A.** The inspection is for a GACAR Part 145 repair station (Essential Maintenance Provider (EMP)) and verification that the repair station is performing maintenance in accordance with (IAW) the GACAR Part 121 operator's CAMP.
- B.** This type of inspection can verify previous surveillance efforts, allegations of improper maintenance or component failure trends. Team inspections based on these reasons should be comprehensive and in-depth. The team in-process inspection can aid GACA in making a determination about the repair station's ability to follow a maintenance scope, comply with process specs, follow shop manuals, and follow each operator's CAMP requirements. Once the team inspection is completed, GACA should have first-hand knowledge of the repair station's compliance with each operator's CAMP requirement.
- C.** It should be noted that the primary purpose of this inspection is to verify a GACAR Part 121 operator's ability to oversee its contracted repair station(s). As a result, it does not verify a repair station's ability to meet all its own requirements under its authorizations. This inspection should not be considered to meet the requirements of repair station inspections.

12.6.5.9. INSPECTOR RESPONSIBILITIES. In preparation, the team members should familiarize themselves with the following, as applicable:

- The applicable GACAR Part 121 operators' operations specifications (OpSpecs) CAMP, Maintenance Manual and other manual procedures that cover maintenance scope for the item or items that are going to be tracked and processed through the facility
- The applicable GACAR Part 145, repair station OpSpecs, ratings, limited ratings, limited specialized services, and process specifications and its Capabilities List (CL)

12.6.5.11. PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites.

- Knowledge of each applicable operator's CAMP
- Knowledge of each applicable operator's Continuing Analysis and Surveillance System (CASS)

EBOOK VOLUME 12. SURVEILLANCE

B. Team Event Organization and Coordination.

- 1) The Director, Airworthiness Division will select a qualified team leader.
- 2) PIs assigned to the repair station certificate are an invaluable resource. Their insight of the certificate will aid the team and the team leader. Their knowledge of the certificate can help guide the team and the leader. If the repair station PI is an advisor to the team, the PI should attend all team meetings and be an integral part of the team's functions and discussions. The PIs should provide support, information, and counsel to the team and in addition, assist the team leader. However, to avoid conflicts of interest, the PIs' roles will be advisory only.
- 3) The Director, Airworthiness Division will determine the number of Inspectors required, select team members, and provide the team leader a list of the operators that utilize the selected repair station.
- 4) The team leader and team members will evaluate all necessary data prior to the team event.
- 5) The team leader should identify specific duties that will be required during the assessment/inspection.
- 6) The team should utilize data collection tools when reviewing the aspects of maintenance from receiving inspection to approval for return to service. This process should be accomplished IAW the operator's CAMP.

12.6.5.13. REFERENCES, FORMS, AND JOB AIDS.

A. References.

- OpSpecs of both the repair station and operator, as applicable
- Volume 4, Chapter 5, Section 1, Evaluate Outsource Maintenance Arrangement for Part 121
- Volume 12, Chapter 2, Section 5, Detailed Process/Task Inspection for Part 121 and 125
- Volume 12, Chapter 2, Section 7, Evaluate/Inspect Outsource Maintenance Organization Facility for Parts 121 and 125

EBOOK VOLUME 12. SURVEILLANCE

- Applicable operator's CAMP
- Process specifications, if applicable
- Federal Aviation Administration (FAA) Advisory Circular (AC) 43-9 (as amended), Maintenance Records.
- FAA AC 120-16 (as amended), Operator Maintenance Programs.
- All applicable operator required maintenance manuals such as fleet specific Manufacturer's Maintenance Manuals, Engineering Orders, Standard Practices Manuals, General Procedures Manuals, and all other as required by the Part 121 operator's CAMP
- All applicable operator's outsource maintenance programs/processes

B. Forms.

- GACA Activity Report (GAR)
- Applicable operator maintenance forms, as specified in the operators CAMP, such as Maintenance Logs, Turn-over Logs, Engineering Orders, Inspection Forms

C. Job Aids. None.

12.6.5.15. OPERATOR IN-PROCESS/TASK INSPECTION PROCEDURES.

A. Prepare for the Inspection. Accomplish the following:

- 1) The team leader should contact the repair station PI as soon possible. The repair station PI will notify the repair station manager/management that a team in-depth inspection is scheduled for the operators having this specific EMP on their D91 OpSpec.
- 2) The team leader shall provide an in-brief to the repair station management before each inspection. This briefing will inform the manager how long the inspection should take and how many Inspectors will be on the team. The team leader should ensure the repair station management understands that this is an inspection of the operators and not the repair station.

EBOOK VOLUME 12. SURVEILLANCE

- 3) Should it be necessary, the team leader should obtain guidance from GACA management as soon as the probability of a significant or complex enforcement action is discovered. For all enforcement cases, the team leader will ensure that the inspection team collects and safeguards relevant evidence.
- 4) Identify the in-process/task.
- 5) Review the inspection criteria.
- 6) Review for clarity Volume 4, Chapter 5, Section 1; Volume 12, Chapter 2, Section 5; and Volume 12, Chapter 2, Section 7 for additional operator outsource maintenance information and procedures.
- 7) Identify and review the operator's outsource maintenance procedures, information, guidance, methods, manuals, or documents to be utilized to verify the maintenance performed is without deviation to the specific operator's procedures required by its CAMP (ref. Volume 4, Chapter 5, Section 1 and operator's OpSpec D91).
- 8) This operator team event will verify that the EMP performs each operator's maintenance IAW the specific operator's CAMP. Ensure all operators' Outsource Maintenance Organizational System contain the required methods or procedures to identify and disseminate those portions of its CAMP (ref. Volume 4, Chapter 5, Section 1 and operator's OpSpec D91).
- 9) The operators may accept different EMP programs or process requirements for maintenance, preventive maintenance, and alterations. However, the manner used by the operator to evaluate, accept, reject or authorize these process or procedures should be explained in the EMP section of the operator's maintenance manual. This allows the EMP's accepted programs, processes and procedures to become an extension of the GACAR Part 121 operator's CAMP.
- 10) Inform the team members and operator representatives of the in-process/tasks to be observed during the inspection.
- 11) Review the EMP outsources contracting or subcontracting procedures in lieu of the operator's own programs.

EBOOK VOLUME 12. SURVEILLANCE

12) Verify and identify any maintenance that may be contracted out by the EMP, to another EMP either certificated or non-certificated. The team leader should review the name, the certificate number if any, and identify any outsource maintenance provider that is contacted by the EMP. The team will verify whether maintenance is performed IAW the operator's CAMP.

B. Perform the Inspection. The following steps are to serve as a guide in performing an operator in-process/task inspection. Certain steps may not be appropriate, depending on the complexity of the repair station or operator.

- 1) *Inspect and review, as applicable, operator outsource maintenance instructions.* Verify that:
 - a) Each operator's outsource maintenance information including procedures to be used in the performance and documentation of the specific operator's intended maintenance, inspection, repair, or overhaul of its aircraft, engine, component, or parts is provided by the respective operator to the EMP IAW its operator contract maintenance provider program (ref. GACAR § 121.659).
 - b) The operator's maintenance instructions reflect the proper technical data for the maintenance intended, and provide all the information required for completing that maintenance IAW the operator's CAMP (ref. GACAR § 121.679 and OpSpec D91).
 - c) Documentation at the EMP reveals the operator has reviewed, evaluated, and accepted or rejected the EMP programs, processes, and procedures as evidenced within its CAMP or other means.
 - d) During the inspection, the team should review the current outsource maintenance arrangement acceptance letters, or other means of authorization the operator has given the EMP for their use. The EMP should keep the letters on file at the facility.
 - e) Support equipment such as, cleaning (dip) tanks, high speed balancing equipment, inspection equipment, or ovens are inspected, cleaned, maintained, and documented as required by the appropriate aircraft, aircraft engine, or component manufacturer and are maintained IAW the Manufacturer's Standard Practices Manual and/or the operator's CAMP (ref GACAR §§ 121.659, 121.679 and OpSpec D91).

EBOOK VOLUME 12. SURVEILLANCE

- f) The operator provides documentation reflecting its CASS to ensure that the EMP has complied with its CASS reporting system and the operator has methods for corrective actions taken on any deficiencies or inadequacies found by the EMP while performing maintenance for the operator. This generally requires the operator to provide results of audits performed on this EMP, providing documentation of their findings and corrective actions taken and recorded in a log or file (ref. GACAR § 121.691).
- g) All maintenance documentation procedures are IAW the operator's CAMP unless other specific procedures for maintenance documentation are to be followed. This includes but is not limited to, the maintenance log discrepancy sheets, required maintenance cards, the inspection forms and the sign-off sheets, shift turn-over logs, parts receiving inspection documents and tracking forms, maintenance records, and procedures (ref. GACAR § 121.699, Volume 4, Chapter 5, Section 1 and OpSpec D91).
- h) The EMP can provide verification the operator trained its personnel in a manner equivalent to the requirements of the operator's CAMP. This may require that EMP personnel attend specific courses and/or maintain specific levels of proficiency (ref. GACAR § 121.695).
- i) Operator maintenance instructions or the operator's accepted EMP maintenance instructions inform, guide, and detail the functions to be performed, sequence of operations, and inspection points to ensure proper handling of articles from one station to another through all phases, and should be addressed from the time the operator's article is received until it is returned to service (ref. GACAR Part 121, Subpart D).
- j) Operator revisions to their maintenance instructions are approved, controlled and incorporated by the operator for use by the EMP. If applicable, verify the EMP is following the revised maintenance instructions (Ref. GACAR § 121.699 and Part 121, Subpart D).
- k) Traceability of all maintenance, preventive maintenance, and alteration documentation is maintained until the completion of all operations and utilized IAW the operator's CAMP (ref. GACAR § 121.699).
- l) How each specific operator ensures its EMP subcontracted maintenance to another maintenance provider is performed IAW that operator's CAMP (ref. GACAR §

EBOOK VOLUME 12. SURVEILLANCE

121.659).

m) IAW GACAR § 121.691 the operator has reviewed and evaluated the performance and organizational requirements of an EMP.

n) The operator's RII program, and RII training is accomplished IAW its CAMP.

2) *The Operator's Outsource Inspection Instructions*. Verify that:

a) The EMP follows the operator's Outsource Maintenance Inspection procedures and the operator CAMP for other maintenance performed by itself or other persons within the maintenance, inspection, repair, and overhaul process as required by operator OpSpec D91 and GACAR § 145.83.

b) The operator's methods of performing routine and non-routine maintenance is followed IAW the operator's CAMP.

c) Operator Outsource Maintenance Information clearly designates the items that are RII, and if this EMP is authorized for, or restricted from, the performance of such Required Inspections (ref. operator's OpSpecs D91).

d) The operator's method of performing RII ensures there is a listing with the designation, title of the personnel authorized to perform such inspection, their qualifications, training, and copies of their authorization on file IAW the operator's CAMP.

e) Procedures for the re-inspection of a previously performed required inspection (buy-back procedures) are followed IAW the operator's CAMP.

f) Procedures, standards, and limits necessary for required inspections and the acceptance or rejection procedures are IAW the operator's CAMP.

g) Required inspections are completed. Verify that prior to the final acceptance of the aircraft, airframe, aircraft engine, and component all inspections are completed.

h) The RII Inspector who performed the RII inspection is not the person that performed the maintenance.

EBOOK VOLUME 12. SURVEILLANCE

- i) Instructions and procedures to prevent any decision of an Inspector regarding a required inspection from being countermanded by persons other than those specified by the operator are followed IAW the operator's CAMP.
- j) Maintenance not completed by shift change or other interruptions are properly documented (turnover log) and completed before the aircraft is returned to service.
- k) Assemblies that require inspection for conformity before closure are included on inspection cards, scheduled maintenance cards, and unscheduled maintenance cards. Verify that inspection cards are utilized IAW the operator's CAMP (Ref. GACAR § 121.659 and operator's OpSpec D91).
- l) Required inspection personnel, procedures, realm of responsibility, and authority are organized in a manner to separate the required inspection functions from the other maintenance functions (ref. GACAR § 121.675).
- m) The operator performed its initial CASS audit; all findings found are corrected prior to the start of the contracted maintenance, and the operator's CASS audit demonstrates the discovery of discrepancies and the corrective action.

3) *Operator's Data at the EMP*. Verify that:

- a) All applicable operators outsource maintenance documentation and guidance including but not limited to maintenance instructions, engineering orders, operator aircraft fleet-specific maintenance manuals, inspection procedures, overhaul manuals, standard practices manuals, and structural repair manuals are all current with proper revisions and dates, and maintained IAW the operator's CAMP (ref. GACAR § 121.679).
- b) All inappropriate, illegible and obsolete data has been purged from the files (ref. GACAR § 121.659 and OpSpec D91).
- c) Nondestructive inspection (NDI) processes are reviewed for conformance with the operator's CAMP (ref. OpSpec D91).
- d) All process specifications and changes are submitted to GACA for evaluation, approval, and accepted by the operator's CAMP (ref. OpSpecs D91).

EBOOK VOLUME 12. SURVEILLANCE

e) Tags, forms, and other documents used are controlled and reviewed, evaluated, and accepted or rejected and the proper operator documentation is available to ensure all tags, forms, and other documents are IAW the operator's CAMP (ref. OpSpec D91).

4) *Major Repairs and Alterations.* Verify that:

- a) The operator's methods and/or procedures to determine if the repair is major or minor are followed (ref. OpSpec D91).
- b) If the task involved a repair alteration, the ASI should verify the operator's approved data to accomplish the task (ref. OpSpec D91).
- c) All maintenance performed by the original EMP or sub-contracted OMP is performed IAW the operator's CAMP (ref. OpSpec D91).

5) *Parts and Materials.* Verify that:

- a) Materials, test records, and standards used in the NDI are identified, controlled, and used IAW the operator's CAMP (ref. OpSpec D91).
- b) All material, parts, and components received, inspected, identified, shipped, handled, and/or stored IAW the operator's CAMP prior to their use (ref. GACAR § 145.83 and OpSpec D91).
- c) There is traceability of material or parts received from distributors, and the records of receiving inspection data list the name, part number, quantity, and inspection results IAW the operator's CAMP (ref. GACAR § 145.83 and OpSpec D91).

6) *Calibrated Tools and Test Equipment.* Verify that:

- a) All special tools are calibrated. Ensure test equipment is identified, maintained, and used for the operation or process required. This must be accomplished IAW the operator's CAMP (ref. GACAR § 145.83 and OpSpec D91).
- b) Calibration records are on file for all tools and test equipment that require calibration. This is IAW the operator's CAMP (ref. GACAR § 145.83 and OpSpec D91).

EBOOK VOLUME 12. SURVEILLANCE

- c) The EMP personnel performing the special or calibrated tool functions, subparagraphs 6a and b above are appropriately trained for their assignments (ref. GACAR § 145.83 and OpSpec D91).

12.6.5.17. TASK OUTCOMES.

A. Brief the findings, concerns and possible GACAR violations with each of the specific operator's PIs.

B. Brief the findings, concerns, and possible GACAR violations with the repair station inspected.

C. Document the Inspection.

1) The team leader will ensure a copy of the completed inspection report and a copy of the entire findings are forwarded to the Office Manager.

2) Team members will document their own findings in GAR, as applicable.

12.6.5.19. FUTURE ACTIVITIES. Normal surveillance.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 6. PART 121 INSPECTIONS

Section 6. Aging Airplane Inspection for Part 121

12.6.6.1. GACA ACTIVITY REPORT (GAR).

A. 3634 (AW) (Aircraft Records)

B. 3647 (AW) (Structural Spot Inspection)

12.6.6.3. OBJECTIVE. This section provides guidance on conducting aging airplane inspections and records reviews for aircraft operated under General Authority of Civil Aviation Regulation (GACAR) Part 121. To accomplish this, the General Authority of Civil Aviation (GACA) aviation safety inspector (Inspector) should conduct structural spot inspections and aircraft records surveillance, as deemed appropriate.

12.6.6.5. GENERAL.

A. General. The importance of maintaining the structural integrity of aging aircraft cannot be overestimated. Air operators have a duty to ensure that their aircraft are maintained in such a manner to ensure that the effects of aging are properly mitigated and controlled. This section addresses inspections that Aviation Safety Inspectors may do to oversee compliance with the air operator's aging aircraft programs. These inspections are particularly important for air operators who operate aircraft that are more than ten years old.

1) *Records Review.* The Inspector will review/sample the following records for each airplane to ensure confidence that the operator is maintaining adequate/reliable records:

- Total years in service
- Total flight hours of the airframe
- Total flight cycles of the airframe
- Date of last records review and inspection

EBOOK VOLUME 12. SURVEILLANCE

- Current status of life-limited parts of the airframe
- Time since 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 the following, including method of compliance:
 - Airworthiness Directives (AD)
 - Inspections and procedures required by GACAR § 121.469
- A list of major structural alterations
- A report of major structural repairs and the current inspection status of those repairs

2) *Aircraft Inspections.* Structural spot inspections should be accomplished as outlined in Volume 12, Chapter 2, Section 2, Spot Inspection of an Operator's Aircraft for Parts 121, 125, 133 and 135.

12.6.6.7. PLANNING.

A. Heavy Maintenance Check. The records reviews and inspections may be carried out as part of the operator's heavy maintenance check. For the purpose of complying with this statute, a heavy maintenance check is defined as a "C" check or segment thereof, a "D" check or segment thereof, or other scheduled maintenance visits where structural inspections are accomplished.

B. Planning. The records review(s) can be, and usually will be, accomplished separately from the aircraft inspection. This is because many operators perform maintenance in one location while the records may be maintained in a different location. If the records review and aircraft inspection are conducted separately, the operator should provide a summary of any additional records entries at the time of the aircraft inspection, such as Airworthiness Directives (ADs) accomplished and major repairs accomplished.

C. Records Reviews and Inspections.

EBOOK VOLUME 12. SURVEILLANCE

1) *Records Review.*

- a) The operator may provide actual “hardcopies” of the records or summaries of compliance as per its approved recordkeeping program.
- b) The Inspector should plan to sample the records to verify accuracy.

2) *Aircraft Inspection.*

- a) Confirm the aircraft is available. Schedule the inspection when the aircraft has been sufficiently prepared for inspection (i.e., opened/cleaned).
- b) The Inspector should be familiar with the aircraft type and inspection program the aircraft is maintained under.
- c) Based on the records review and the planned maintenance, the Inspector should select several structural inspection items to sample, if practical. Included in the items selected for sampling should be job task cards that indicate the:

- Task
- Method of compliance
- Tooling required
- Required signoffs

3) *Operator Notification.* The GACA should notify the operator that the records reviews and inspections are complete. If the aircraft records reviews and/or inspections are accomplished by different Inspectors in different locations, coordination of these efforts is essential.

12.6.6.9. PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. Familiarity with the aircraft type and inspection program the aircraft is maintained under.

B. Coordination. This task requires coordination between the Inspector and the operator.

EBOOK VOLUME 12. SURVEILLANCE

12.6.6.11. REFERENCES, FORMS, AND JOB AIDS.

A. References:

- GACAR Part 26 and 121
- Volume 12, Chapter 2, Section 2, Spot Inspection of an Operator's Aircraft for Parts 121, 125, 133 and 135
- Volume 12, Chapter 6, Section 7, Maintenance Records Inspection for Part 121 GACAR Part 121

B. Forms. GAR

C. Job Aids. None.

12.6.6.13. MAINTENANCE RECORDS REVIEW.

A. Receive the Records.

B. Conduct the Review. The Inspector will review/sample the records.

12.6.6.15. AIRCRAFT INSPECTIONS.

A. Plan the Inspection. The Inspector will coordinate with the operator as to the scope and extent of the planned inspection.

- 1) The Inspector should select structural inspections, Corrosion Prevention and Control Programs tasks, or major repairs/modifications that are scheduled to be accomplished during this maintenance visit. If possible, supporting documentation for these tasks should be obtained before conducting the planned inspection.
- 2) While performing these inspections, every effort should be made to avoid interfering with, or inconveniencing, the planned/scheduled maintenance.

B. Observe Maintenance Tasks. Observe maintenance tasks to ensure that:

- Work instructions provide sufficient detail to accomplish the scope of the required

EBOOK VOLUME 12. SURVEILLANCE

maintenance task

- Required tooling and materials are available and used
- Work is accomplished by properly trained and qualified personnel

12.6.6.17. TASK OUTCOMES.

A. Complete the GAR.

B. Complete the Task. Successful completion of this task will result in the following:

- 1) The Inspector conducting the inspection will notify the Principal Maintenance Inspector (PMI) of any significant findings, as applicable.
- 2) The PMI will notify the operator of any findings.

12.6.6.19. FUTURE ACTIVITIES. Inspectors will accomplish structural spot inspections and aircraft records surveillance, as required.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 6. PART 121 INSPECTIONS

Section 7. Maintenance Records Inspection for Part 121

12.6.7.1. GACA ACTIVITY REPORT (GAR).

A. 3634 (AW) (Inspect Aircraft Records)

B. 3649 (AW) (AD Compliance)

12.6.7.3. OBJECTIVE. This section provides guidance for inspecting an operator's aircraft maintenance records under General Authority of Civil Aviation Regulation (GACAR) Part 121.

12.6.7.5. GENERAL.

A. Records. Aircraft maintenance records include any records that document the work performed on an aircraft. An operator's aircraft maintenance records must be inspected periodically to ensure that they meet the requirements of the operator's recordkeeping system.

B. Surveillance Criteria. While inspecting an operator's aircraft maintenance records, aviation safety inspectors (Inspectors) must determine if all the work is based on instructions, procedures, or information that was approved previously or accepted by the General Authority of Civil Aviation (GACA). Such data can be in the form of:

- Manufacturer's manuals
- Service Bulletins (SB)
- Service Letters (SL)
- Data included in the operator's approved inspection and/or maintenance programs
- Manufacturer/operator's approved Engineering Orders (EO) or authorizations
- Airworthiness Directives (AD), including Sensitive Security Information (SSI) ADs (generally applicable to GACAR Part 121 operators)

EBOOK VOLUME 12. SURVEILLANCE

- Other accepted documents

C. Personnel Identification Recording Requirements. The operator's manual must provide for a positive means of identification, such as an employee identification number, for any person performing or approving the work.

12.6.7.7. RECORD REQUIREMENTS.

A. Retaining Airworthiness Releases.

- 1) GACAR Part 121 operators must retain the Airworthiness Releases for 2 months.
- 2) All of the records necessary to show that the requirements for the issuance of an Airworthiness Release are met must be retained until the work is repeated or superseded, or for 1 year.

B. Total Time in Service Records.

NOTE: For the purpose of this paragraph, "time in service" with respect to maintenance time records means from the moment an aircraft leaves the surface of the earth until it touches down at the next point of landing.

- 1) Total time in service is the accumulation of "time in service" starting from the date of manufacture and continuing for the life of the aircraft. You must not confuse engine rebuilding and certifying to zero time in service with a zero time since last overhaul (TSLO) certification.
- 2) Zero TSLO certification does not affect the calculation of total time in service. When an engine is rebuilt and certified to zero time, the total time in service is zero (GACAR, § 91.461).

NOTE: Only the manufacturer or the manufacturer's representative can zero time an engine.

C. Life-Limited Parts. Operators must have a current record of the status of life-limited items. This record indicates the present accumulated time in service of each life-limited item.

NOTE: Life-limited parts may not be rebuilt and certified to zero time.

EBOOK VOLUME 12. SURVEILLANCE

D. Records of Overhaul. An operator must maintain overhaul records of any item required to be overhauled. These records must be maintained until the work is superseded by work of equivalent scope and detail.

E. Inspection Status. Inspection status defines the work that has been and is scheduled to be performed for the inspection or maintenance program. The inspection status records must show the following:

- Type of most recent inspection
- The time at which that inspection was performed, expressed in terms of hours; cycles, or calendar time
- The scheduled time and type of the next inspection

F. Status of ADs. The operator must maintain a current status of applicable ADs, including the date and methods of compliance, and if the AD involves recurring action, the time and date when the next action is required.

1) All work programs should include the surveillance of ADs. You can use the following methods to accomplish AD verification:

- a) Actual surveillance of the AD being accomplished. This would also include a review of all paperwork, such as Engineering Authorizations, EOs, workcards, maintenance manual references, and SBs, to ensure that the AD is properly complied with.
- b) Physical verification of previous AD accomplishment. This should include verification, by record review, that the method of compliance is clearly recorded (e.g., paragraph, section, etc.), and if the AD requires recurring action, the time and date when the next action is due.

G. Major Repair and Major Alteration Record.

- 1) Submit a copy of each report of a major alteration to the GACA.
 - 2) Retain a copy of each report of a major repair under the procedures set forth in the operator's maintenance manual for inspection by the GACA.
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EBOOK VOLUME 12. SURVEILLANCE

12.6.7.9. REPAIR STATION RECORDS OF WORK PERFORMED ON AN OPERATOR'S AIRCRAFT. Since repair stations only have to retain records of work performed for 2 years, some operators have reported that maintenance records are not always available from repair stations beyond the 2-year retention period. Since the operator is always responsible for obtaining and retaining the records required by the GACA, advise operators to require a copy of the work documentation from the repair station at the time that the work is performed.

12.6.7.11. COORDINATION REQUIREMENTS. This task requires coordination between the Inspector and the operator.

12.6.7.13. REFERENCES, FORMS, AND JOB AIDS.

A. References.

- GACAR Part 39, 43, 91 and 121

B. Forms. GAR.

C. Job Aids. None.

12.6.7.15. PROCEDURES.

A. Review the Office File.

B. Inspect the Maintenance Records. Ensure that the operator has retained the required maintenance/alteration/inspection records for each aircraft, including airframe, engine, propeller, and appliances. These records must include the following information:

- 1) A description of the work performed (data acceptable to the GACA) including the date of completion.
- 2) The name of the person performing the work, if the work is performed by a person outside the organization of the operator.
- 3) The name or other positive identification of the person approving the work.

C. Inspect the Operator's Record System. Inspect records to ensure that manual procedures are

EBOOK VOLUME 12. SURVEILLANCE

being followed. During inspection, document and photocopy any confusing areas, obvious omissions, or apparent discrepancies. Records checked should include the following:

1) *Airworthiness Releases.*

- a) Ensure that operators retain Airworthiness Releases for at least 2 months.
- b) Ensure that the Airworthiness Release signature is authorized by the operator.
- c) Review the signer's training record to ensure that the person is trained, qualified, and authorized to the level identified in the operator's manual.

2) *Flight/Maintenance Logs.* Obtain and review the flight/maintenance logs to determine the effectiveness of the Airworthiness Release procedures following scheduled inspections and non-routine maintenance. Review the records to ensure the following:

- a) Flight discrepancies are entered after each flight.
- b) Corrective actions are related to the discrepancy.
- c) Corrective actions and sign-offs are entered in the maintenance record in accordance with manual procedures.
- d) Repetitive discrepancies are handled according to the manual.
- e) Deferred maintenance, as authorized by the minimum equipment list (MEL), is deferred in accordance with the operator's MEL and manual instructions.
- f) Required Inspection Items (RII) are signed off in accordance with the manual instructions.
- g) The inspector was authorized by the operator to perform the inspection.

3) *Scheduled Inspections.* Select or obtain work packages for scheduled inspections and ensure the following:

- a) Scheduled inspections are properly signed off.

EBOOK VOLUME 12. SURVEILLANCE

- b) Generated non-routine items are properly signed off.
 - c) RII are properly identified and signed off by properly authorized, qualified, certificated, and trained personnel.
 - d) Repairs are categorized correctly (major or minor) and approved data is being used, as required.
- 4) *Total Time/Cycle in Service Records.* Compare the manual procedures with the actual accomplishment of the total time/cycle in service records for the airframe, engine, propeller, and rotor.
- NOTE:** Although GACAR Part 121 does not specifically call for time/cycle in service records of engines, propellers, and rotors, it is difficult for an operator to control the maintenance program without those records.
- a) Select and obtain a total time/cycle in service record for a sample number of aircraft to ensure that cumulative flight times/cycles are added to the record.
 - b) Make a spot check of the cumulative total time/cycle in service against the flight logs to ensure that daily entries correspond to the flight log.
 - c) If the operator maintains a handwritten maintenance record for engines, compare the record entries to the aircraft flight log entries to determine the following:
 - Overall accuracy
 - The possible transposition of flight time/cycle in service, numbers, etc.
- 5) *Life-Limited Parts Records.* Compare the manual procedures for life-limited parts with the actual recording of the current status of life-limited parts. Select a random sample of records and ensure the following:
- a) All life-limited parts described on Type Certificate Data Sheets (TCDS) or in a manual referenced on the TCDS are noted.
 - b) The current status of each part is provided to include:

EBOOK VOLUME 12. SURVEILLANCE

- Total operating hours/cycles accumulated
 - Life limit (total service life)
 - Remaining time/cycles
 - Modifications
- c) The time/cycle limits on the operator's list are the same as those listed by the manufacturer.
- d) Life limits have not been exceeded. Select a sample of life-limited items that have been installed within the last 12 months and review records to ensure that life-limited time was carried forward from the previous service record.
- e) If overhauled, the overhaul record is available.
- f) The life limit of an item has not been changed as a result of the overhaul.
- 6) *Overhaul Records.* Compare the manual procedures for maintaining the overhaul record with the actual overhaul record content.
- a) Select a random sample of overhauled items to ensure the following:
- Overhaul records are available for items selected
 - The records contain a description of the overhaul
 - The records show the time since the last overhaul
 - The item was overhauled in accordance with the overhaul specifications by a qualified and authorized person
 - The component was approved for return to service by an authorized person
- b) Review removal/installation records of overhauled components to determine if the overhaul was done within the authorized time limits. Current regulations require these records to be maintained until the work is superseded by work of equivalent scope and

EBOOK VOLUME 12. SURVEILLANCE

detail.

7) *Inspection Status Records.*

- a) Compare the manual procedures for maintaining the current aircraft inspection status with available records. Ensure that the recorded daily flight hours/cycles are used to obtain the current inspection status.
- b) Take a random sample of aircraft inspection records to ensure that scheduled inspection times/cycles were not exceeded (overflow).

8) *One-Time/Recurring ADs.* Request a random sample of aircraft AD compliance records to ensure the following:

- a) The records contain all applicable ADs for the sampled aircraft, and
- b) AD requirements were accomplished within the effective times of the AD.

NOTE: Put a special emphasis on checking recurring ADs.

- c) The AD record contains the current status and method of compliance. The current status must include the following:

- A list of all ADs applicable to the aircraft
- Date and time of compliance
- Time and/or date of next required action (if recurring AD)

- d) The record is being retained indefinitely

NOTE: If any ADs have an alternative method of compliance, ensure that the operator has obtained prior approval for that alternative method.

- e) The method of compliance is the same as specified in the AD or alternative method of compliance (AMOC).
- f) The date of compliance is identical with the date on the current status list.

EBOOK VOLUME 12. SURVEILLANCE

- g) The mechanic/inspector was properly trained and authorized to accomplish the work.
- h) The accomplishment was properly signed off.
- 9) *Major Alteration and Major Repair Records.*
- a) Compare the manual procedures for maintaining a list of major alterations and the reports for major repairs with the actual work records.
- b) Compare a random sample of major repair and alteration records to the alteration and repair list and/or reports to ensure the following:
- Lists and/or reports contain the date of accomplishment and a brief description of the work
 - The respective maintenance records show that the work was accomplished in accordance with approved data

NOTE: When major alterations or major repairs are identified but not recorded on the above-mentioned list or report, request the actual maintenance accomplishment record and the GACA-approved data from the operator.

D. Check the Operator's Procedures. Ensure the operator has procedures that detail how all maintenance records generated at line maintenance facilities or other off-site stations will be transferred to the facility where records are normally held.

E. Analyze the Findings. Evaluate all deficiencies to determine if corrective actions will be required.

12.6.7.17. TASK OUTCOMES.

A. Complete the GAR.

B. Complete the Task. Completion of this task may result in a letter from the GACA informing the operator of the results of the inspection.

C. Document the Task. File all supporting paperwork in the GACA office file.

EBOOK VOLUME 12. SURVEILLANCE

12.6.7.19. FUTURE ACTIVITIES. Normal surveillance.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 6. PART 121 INSPECTIONS

Section 8. Monitor Continuous Airworthiness Maintenance Program (CAMP) for Part 121

12.6.8.1. GACA ACTIVITY REPORT (GAR).

A. 3637 (AW)

12.6.8.3. OBJECTIVE. This section provides guidance for ensuring that the General Authority of Civil Aviation Regulation (GACAR) Part 121 operator's Continuous Airworthiness Maintenance Program (CAMP) includes the maintenance/inspection tasks necessary to maintain its aircraft in an airworthy condition.

NOTE: The guidance in this section should be followed by any GACAR Part 135 operators who decide to utilize a CAMP program.

12.6.8.5. GENERAL. The following definitions are applicable for use when discussing the CAMP process:

A. Definitions.

- 1) *Scheduled Maintenance.* A group of tasks, accomplished at specified intervals which prevent deterioration of the safety and reliability levels of the aircraft.
- 2) *Unscheduled Maintenance.* A group of tasks resulting from scheduled maintenance, reports of malfunctions, and data analysis, used to restore equipment to acceptable safety and reliability levels.
- 3) *Accountability.* For the purposes of this job task, “accountability” refers to the procedures established by the operator to control the issuance and return of completed job cards, non-routine coupons/sheets, and other work forms issued during any maintenance/inspection function.
- 4) *Work Packages.* Work packages contain detailed instructions, standards, methods, and techniques for performing a task and may be presented as work forms, job cards, and/or other

EBOOK VOLUME 12. SURVEILLANCE

accepted methods. A work package satisfies accountability and recordkeeping requirements.

B. CAMP.

- 1) Operators operating under GACAR Part 121 are required to have a CAMP. The CAMP must be detailed in the operator's maintenance manual system. The maintenance manual must contain specific maintenance and inspection tasks, including methods, standards, and techniques for accomplishing these tasks.
- 2) There are additional programs required by the regulations, including training programs, Continuing Analysis and Surveillance (CASS) Programs, recordkeeping and reporting systems, etc. These programs are an important part of the CAMP and are used to support the maintenance tasks.
- 3) An approved CAMP establishes the operator as a maintenance entity, and when followed, ensures the continued airworthiness of an aircraft and its equipment.

NOTE: Additional CAMP and CASS guidance can be found in Volume 4, Chapter 3 of this handbook.

C. Operations Specifications (OpSpecs). The scheduled maintenance program is derived from the approved requirements stated in the operator's OpSpecs. The operator must have work forms, job cards, and/or other methods to accomplish the scheduled maintenance program and have manual procedures for implementing each special authorization.

12.6.8.7. CAMP PROGRAM OVERVIEW.

A. Required Manuals. Since the operator is required to provide the appropriate manuals containing the CAMP to the General Authority of Civil Aviation (GACA), the majority of this task is performed there. At a minimum, the GACA must be provided with the following:

- The Maintenance Manual (MM)
- Detailed instructions for accomplishing the scheduled maintenance/inspection program
- Aircraft manufacturer's maintenance manuals incorporated by the operator, including the illustrated parts catalogue

EBOOK VOLUME 12. SURVEILLANCE

B. Maintenance Facility. The GACA normally does not have, and is not required to have, all of the repair/overhaul manuals for engines, propellers, and appliances. The aviation safety inspector (Inspector) must therefore go to the operator's facility to ensure that the operator has the appropriate instructions and standards to accomplish its repair/overhaul maintenance functions.

C. Manual System. The operator's manual system must define every facet of the CAMP, and should consist of the following:

1) *Maintenance Manual (MM).* This manual contains both the general information on how the operator conducts its business and the scheduled maintenance program instructions and requirements for a specific type of aircraft. The manual must include provisions for accountability and for meeting the recording requirements of GACAR § 121.699 and may include the following:

- Instructions to accomplish scheduled checks (lettered, phased, numbered, etc.), including the job cards for accomplishing these checks
- Job cards for accomplishing recurring non-routine maintenance (i.e., engine change cards, propeller change cards)

2) *Technical Manuals for Maintenance Standards and Methods.* These manuals contain the standards for overhaul, repair, replacement, calibration, and other requirements to return the aircraft and its components to its original or properly altered condition. They consist of the current manufacturer's maintenance/overhaul manuals and/or other standards developed by the operator and accepted by the GACA.

D. Key Areas of the Maintenance Program.

1) *Aircraft Inspection Requirements.* This area includes routine inspections and tests performed on the aircraft at prescribed intervals.

- a) In the past, operators may have been approved to use maintenance programs developed by other operators with similar equipment but greatly different operational environments. To ensure that the aircraft is maintained properly, it is imperative that whatever combination of inspection intervals are used (calendar time, cycles, or hours), that the inspection is performed by whichever interval occurs first. This compensates

EBOOK VOLUME 12. SURVEILLANCE

for differences or changes in the operator's operational environment.

b) Those operators that do not have calendar time requirements must equate the current aircraft utilization in hours to a calendar date. For example, an operator has operated 3,000 hours in the past 12 months and has a 3,000 hour inspection interval. The inspection requirement should therefore be 3,000 hours or 12 months, whichever comes first.

2) *Scheduled Maintenance.* This area concerns maintenance tasks performed at prescribed intervals.

a) Some scheduled maintenance tasks are accomplished concurrently with inspection tasks (i.e., Airworthiness Directive (AD) notes and Service Bulletins (SB)) that are a part of the inspection element and may be included on the same form. Scheduled tasks include such items as:

- Replacement of life-limited items
- Replacement of components for periodic overhaul or repair
- Special inspection such as x-rays
- Checks or tests for on-condition items
- Lubrication

b) Segmented Inspections and Built-in Inspection Tolerances (WINDOWS).

1. Principal maintenance inspectors (PMI) assigned to operators that have a CAMP, during the course of normal surveillance, will review their operator's program to ensure that the inspection completion times average at or before the approved time/due date.

2. PMIs will ensure that the use of WINDOWS in their operators' CAMP do not allow the accumulation of time resulting in an overall escalation in the inspection interval.

3. Operators that are authorized short-term escalation will not be eligible for

EBOOK VOLUME 12. SURVEILLANCE

WINDOWS.

- c) Special work forms can be provided for accomplishing these tasks, or they can be specified by a work order or other document. Instructions and standards for accomplishing each task must be provided to ensure that the work is done in accordance with (IAW) established procedures and is properly recorded.
- d) Special emphasis should be placed on recordkeeping requirements of a scheduled maintenance program, since past inspections have found that the status of a scheduled maintenance activity was not supported by adequate records. This has caused considerable problems in determining the current status of life-limited parts, AD requirements; overhaul records, etc., since the GACARs require each operator to keep accurate maintenance records.

3) *Unscheduled Maintenance.* This area provides procedures, instructions, and standards to accomplish maintenance tasks generated by the inspection.

- a) A continuous aircraft maintenance record can be used for occurrences and the resulting corrective actions between scheduled inspections. Inspection discrepancy forms (non-routine coupons) process unscheduled maintenance tasks in conjunction with scheduled maintenance.
- b) Instructions and standards for unscheduled maintenance are provided in the operator's technical manuals, consisting of the aircraft structural repair manual and manufacturer's maintenance manuals for aircraft, engine, propeller, and appliances. These manuals are a part of the approved CAMP, and must be used when performing maintenance.
- c) When there is no technical information available and maintenance is required, the operator must develop or acquire the data needed to perform the maintenance. This maintenance data must be evaluated as major or minor, according to the operator's procedures.
- d) Special emphasis must be made by Inspectors to ensure that operators properly classify repairs.

4) *Repair/Overhaul of Engine, Propeller, and Appliances.* This area concerns shop

EBOOK VOLUME 12. SURVEILLANCE

operations which, although they encompass scheduled and unscheduled tasks, are remote from the maintenance performed on the aircraft as a unit.

- a) Aircraft engine and propeller manuals containing instructions for installation, operation, servicing, and maintenance are accepted by the GACA. These manuals are accepted as part of type certification and are incorporated as part of the operator's manual system. They require no further review by the GACA.
- b) The appliance manufacturer's manual that the operator chooses to incorporate as a part of its maintenance manual is not formally approved. It is considered by the GACA to be acceptable data for accomplishing major or minor repairs.
- c) If the airframe, engine, or propeller manufacturer's instructions require special procedures, tolerances, or specifications, these instructions must prevail over the appliance manufacturer's instructions.
- d) The GACA can formally issue supplemental information, including ADs, which supersede all manufacturers' specifications.

5) *Structural Inspection/Airframe Overhaul.* Most of the information required to develop an initial structural inspection program will be developed by the manufacturer.

- a) The scheduled inspection program provides the framework for all the scheduled maintenance packages. Structural inspections are normally integrated throughout the operator's scheduled maintenance program.
- b) The various levels of inspection must be clearly defined in the operator's program. For example, the area under consideration may require a visual inspection during pre-flight, where a higher inspection such as "B" or "C" check may require more than a visual inspection of the same area. A comprehensive inspection or airframe overhaul is usually referred to as a "D" check, and may include all, or nearly all, of the scheduled tasks in a maintenance program.

6) *Structural Inspection Document Requirements.* When the operator has aircraft that are identified in a particular structural inspection document, the operator must incorporate these additional age-related structural inspections into its maintenance schedule.

EBOOK VOLUME 12. SURVEILLANCE

7) *Required Inspection Items (RII)*. This area concerns maintenance work which, if improperly accomplished, could endanger the safe operation of the aircraft. RII items appear in all elements of the operator's CAMP. They receive the same consideration regardless of whether or not they are related to scheduled or unscheduled tasks. The fact that an RII requirement arises at an awkward time or inconvenient location has no bearing on the need to accomplish it properly.

a) The operator must designate those items that need to be inspected, and must develop methods for performing the required inspections. The operator should consider the following when determining what tasks to designate as RII items:

- Installation, rigging, and adjustments of flight controls and surfaces
- Installation and repair of major structural components
- Installation of an aircraft engine, propeller or rotor, and the overhaul or calibration of certain components, such as engines, propellers, transmissions, and gearboxes, or navigational equipment, the failure of which would affect the safe operation of the aircraft

b) It is the responsibility of the operator to evaluate the work program and identify RII items in a suitable manner. The Inspector must evaluate the proposed list of RII items to determine if it is adequate.

c) RII item findings consistently represent a major portion of an inspection. The following are examples of these findings:

- No specific training programs developed for RII personnel
- No authorization list of RII inspectors
- RII items not accomplished
- RIIs performed by unauthorized persons
- Failure to comply with RII procedures
- Contract personnel not properly trained/qualified/authorized

EBOOK VOLUME 12. SURVEILLANCE

- Lack of proper RII-designated items
- Failure to have countermand procedures

E. Special Maintenance/Safety Considerations.

- 1) There exists, in transport category aircraft, a potential hazard consisting of fires in inaccessible areas of the aircraft and the resulting hazards to cabin occupants.
 - a) During original certification of the aircraft, clean or uncontaminated material, such as insulation blankets, will not readily support combustion. However, after extended periods of service they have been found to be contaminated with lint, dirt, oily films, lubricant, fuel, and corrosion inhibitors that are conducive to ignition by low intensity ignition sources. Low intensity ignition sources can consist of the following:
 - Arc tracking of aircraft wiring and/or fluorescent light ballasts
 - Arcing light sockets and/or battery ground cables
 - b) It is recommended that each Inspector review the operator's CAMP to determine if an effective quality control procedure is in place that would discover these insulation breakdowns. In addition, Inspectors should ensure that the program addresses the periodic inspection of aircraft wiring and the removal of contaminants, especially in inaccessible areas.
 - c) Inspectors should also be aware of the conditions associated with Kapton insulation breakdown. Operators should be advised to exercise caution in exposing the aircraft wiring to the adverse conditions under which they have control, notably:
 - Increased strain (tighter wire bends)
 - Water
 - Exposure to high pH content cleaning compounds
- 2) *Emergency and Flotation Equipment.* Operators are not allowed to deviate from

EBOOK VOLUME 12. SURVEILLANCE

compliance with GACAR § 121.505(a), pertaining to the regular inspection of emergency and flotation equipment.

- a) Specific guidance on frequency of inspection and life-limits are contained in the respective manufacturer's maintenance manuals. Most life vest manufacturer's manuals address the age issue of life preservers. The manuals state that if the vests are over 10 years old and cannot pass the leakage test or require repair or replacement parts, that they are non-repairable. If a particular operator is experiencing failure rates at periods shorter than 10 years, that operator's inspection interval should be changed to adjust for certain environmental conditions or unique handling situations.
- b) Inspectors should review their operator's maintenance program to ensure the effectiveness of the inspection intervals for emergency and flotation equipment and to ensure regulatory compliance. The Inspector should also review the operator's failure rate to determine if an adjustment to the inspection interval should be considered.
- 3) Inspectors should audit the oral and written changeover procedures between arriving and departing maintenance shifts, required by their applicable manuals, to ensure that the exact status of all phases of "maintenance in progress" is accurately transferred between shifts.
- 4) Inspectors should insure that a lightning/High Intensity Radiated Fields (HIRF) protection maintenance program is submitted to the GACA. Operators of older generation aircraft with mainly analog electrical/electronic (non-digital) controls and displays must ensure that their maintenance programs include lightning inspection tasks. An integral part of this program is a developed sequence of inspections that are required in the event of exposure to lightning and/or HIRF environment, as well as maintenance/inspection due to aging and environmental degradation of aircraft or during heavy zone inspections. The program should address protection features such as structural shielding, insulation degradation, and electrical bonding integrity. As a minimum this plan should:
 - a) Identify aircraft flight critical systems and equipment, associated wiring, and locations on aircraft.
 - b) Identify aircraft systems and/or line replaceable units (LRU) that may be affected by exposure to lightning/HIRF, and whose proper operation is critical to the operation of the aircraft. Determine equipment locations within the aircraft and the routing of

EBOOK VOLUME 12. SURVEILLANCE

wiring between LRUs.

- c) Determine if any of the critical systems and equipment are mounted outside the protective structure of the aircraft. The assurance program should provide information on assessing the protection level of these components and assemblies.
- d) Identify specific lightning and HIRF protection features, including wire shields, connectors, bonding jumpers, structural shielding, and terminal protection devices.
- e) The plan should identify and detail the type and frequency of inspections and maintenance. The plan should include requirements for test and inspection of electromagnetic protection installed within the equipment, if identified and required by the equipment manufacturer.
- f) Identify items which rely on shield and connector bonding, sealing materials, ground jumpers, structural field foil liners, etc., for electromagnetic protection. Provide a program for evaluation and determination that proper protection is provided. Maintenance efforts should make sure that these items are properly identified to preclude the possibility of degradation or accidental removal during normal aircraft maintenance that could negate or eliminate the designed protection.
- g) Identify devices which may degrade in time due to corrosion, fretting, flexing cycles or other causes.
- h) The results of the tests made during the performance of the inspection program should be evaluated to ascertain if the maintenance program needs additions/deletions, escalation or reduction in inspection intervals, and the impact on scheduled/unscheduled maintenance programs.

12.6.8.9. PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites:

- Familiarity with the operator's maintenance manual and OpSpecs
- Familiarity with the type of aircraft being inspected

B. Coordination. This task requires coordination between the Inspector and the operator.

EBOOK VOLUME 12. SURVEILLANCE

12.6.8.11. REFERENCES, FORMS, AND JOB AIDS.

A. References:

- GACAR Part 43 and 121
- Federal Aviation Administration (FAA) Advisory Circular (AC) 120-16 (as amended).
- Maintenance Steering Group (MSG) -2 and -3 documents
- Operator's OpSpecs
- Operator's maintenance manual

B. Related Reading Material. A comprehensive discussion of issues relating to lightning and HIRF environment can be found in the following:

- FAA AC 20-155 (as amended), SAE Documents to Support Aircraft Lightning Protection Certification.
- FAA AC 20-136 (as amended), Protection of Aircraft Electrical/Electronic Systems Against the Indirect Effects of Lightning.
- RTCA Document DO-160, Environmental Conditions and Test Procedures for Airborne Equipment
- DOT/FAA/CT-89/22, Aircraft Lightning Protection Handbook, F. A. Fisher, J. A. Plumer, and R. A. Perala

C. Forms. GAR.

D. Job Aids. None.

12.6.8.13. INSPECTION PROCEDURES.

A. Review the Operator's OpSpecs . Determine what the applicable maintenance program requirements are.

EBOOK VOLUME 12. SURVEILLANCE

B. Review the Operator's Maintenance Manual System. Ensure that the manual system includes procedures for accomplishing the following:

1) *Aircraft Inspection Requirements.*

- a) Ensure that the maintenance manual contains detailed instructions for accomplishing required inspections and checks.
- b) Compare a scheduled check (lettered, phased, numbered, etc.) work package to the OpSpecs inspection requirements to ensure that all items are included and are scheduled at the appropriate inspection intervals.
- c) Sample items identified for inspection/check and ensure that the work packages have been developed to accomplish these items. The work packages must be appropriate to the identified maintenance process, e.g., visual inspections, detailed inspections, functional checks.

NOTE: A “C” Check work package is preferred due to its size and complexity.

- d) Ensure that work packages include provisions for the accountability and recording of these inspection tasks.
- e) Ensure that there are provisions for accountability and recording of non-routine maintenance resulting from the findings of the scheduled inspection.

2) *Scheduled Maintenance Requirements.*

- a) Sample items requiring scheduled maintenance to ensure the following:
 - Work forms, job cards, and other methods have been developed
 - Work forms, cards, and/or methods provide detailed instructions and standards for performing the scheduled maintenance (i.e., servicing/lubrication tasks, restoration tasks, replacement of parts or components with hard-time limitations)

- b) Ensure that there are provisions for the accountability and recording of the following:

EBOOK VOLUME 12. SURVEILLANCE

- Scheduled maintenance tasks
- Non-routine maintenance resulting from the scheduled maintenance

3) *Unscheduled Maintenance Requirements.*

- a) Ensure that the operator has procedures, instructions, and standards to accomplish maintenance that results from inspection findings, operational malfunctions, abnormal operations (hard landings, lightning strikes, etc.) or other indications of the need for maintenance, such as corrective action from failure analysis.
- b) Ensure that the operator has procedures for evaluating repair requirements to properly classify the repair as major or minor.

NOTE: All repairs require GACA-approved repair data.

- c) Ensure that the operator has provisions for accounting and recording all unscheduled maintenance activity, i.e., manual sections for handling unscheduled maintenance activity.

4) *Repair and Overhaul of Engines, Propellers, and Appliances.*

- a) Ensure that the operator has provided instructions and standards to accomplish repair and overhaul tasks for those items requiring repair and overhaul.
- b) Identify and select several aircraft components from the OpSpecs or controlling documents with overhaul requirements. These components will be used during the on-site inspection to ensure that the operator has repair/overhaul specifications available.
- c) Ensure that the operator has provisions for certifying and recording the work.
- d) Document those items selected for future on-site inspection.

5) *Structural Inspection/Airframe Overhaul.*

- a) Ensure that the operator has instructions and standards for performing structural inspections and airframe overhauls.

EBOOK VOLUME 12. SURVEILLANCE

b) Sample selected scheduled structural inspection/airframe overhaul items to ensure that work forms, job cards, and/or other methods are available for performing these tasks.

c) Ensure that the operator has established provisions for accountability and recording of these tasks.

6) *Structural Inspection Document Requirements, if applicable.*

a) Ensure that the operator has identified those aircraft required to be included in a structural inspection program. Compare the operator's aircraft serial numbers with the serial numbers in the structural inspection document to ensure that all required aircraft are included.

b) Ensure that the operator has instructions and standards for performing inspections on those aircraft subject to supplemental structural inspections as identified in the structural inspection document.

c) Ensure that the operator has provisions for accounting and recording the work.

d) Identify and document any aircraft not being maintained according to the Supplemental Structural Inspection Document (SSID) requirements.

7) *RII Requirements.* Ensure the following:

a) That the operator has designated those maintenance tasks requiring additional inspections (RII inspections).

b) That the operator has developed procedures to meet the certification, training, qualification, and authorization requirements for RII personnel.

c) That the operator has procedures for ensuring the accomplishment of RII items.

d) That the operator has procedures for the buy-back of items that failed the RII inspection and require re-inspection after additional corrective action.

e) That the operator has procedures and standards for accepting or rejecting RII items.

EBOOK VOLUME 12. SURVEILLANCE

- f) That the operator has procedures that prevent any person who performs an item of work from performing a RII inspection of that work.
- g) That the operator has procedures for ensuring that the persons performing RII inspections are under the control and supervision of the inspection unit.
- h) That the operator has procedures for ensuring a current list of RII inspectors is maintained, including all names, occupational titles, and inspections they are authorized to perform.
- i) That the operator has procedures to prevent any inspector's decision regarding a required inspection from being countermanded. Exceptions include supervisory personnel of the inspection unit or a person at the level of administrative control that has overall responsibility for the management of the required inspection function and other maintenance.
- j) That the operator has shift-change procedures for RII items to include designating the individual responsible for briefing the arriving shift's supervisors and personnel of the exact status of maintenance in progress. These procedures must also include accounting for the in-progress maintenance status in the operator's work packages.

C. Significant Differences between Flight Cycle and Flight Time Relationship Affecting Airplane Maintenance Programs. Inspectors review existing and future maintenance requirements to verify their operators conform to the following:

- 1) An operator's inspection or maintenance program must provide for timely detection of both flight time- and flight cycle-related deficiencies. Operators that have a flight hour maintenance program also must take into consideration flight cycle and calendar inspection and maintenance tasks.
- 2) For airplanes that accumulate numerous flight cycles (landing and pressurization) per flight hour, the maintenance or inspection program must cover all flight cycle-related items (systems and structure), and ensure that no adverse trend (high component removal rate or early fatigue cracking in primary structure) is occurring. If adverse trends are occurring, then a program change may be needed. If early fatigue cracking is occurring, the PMI will consult with the Airworthiness Engineering Section before a program change is considered.

EBOOK VOLUME 12. SURVEILLANCE

- 3) For airplanes that accumulate more flight hours per flight cycle, the inspection and maintenance program must consider all structures that are sensitive to gust and maneuvering loads (wings and empennage). If a structure is experiencing fatigue cracking at current inspection intervals, then a program change may be needed. If early fatigue cracking is occurring, the PMI will consult with the Airworthiness Engineering Section before a program change is considered.
- 4) SSID programs are mandated by AD. The SSID inspection interval cannot be increased or decreased without the approval of the Director, Airworthiness Division.
- 5) Airplanes that are designed to damage tolerance requirements must have a GACA-approved Airworthiness Limitations Section (ALS) as part of the instructions for continued airworthiness (ICA). The inspections contained in the ALS cannot be increased or decreased without the approval of the Director, Airworthiness Division.

D. Perform the Inspection at the Operator's Facility. From the components selected during the review of the repair/overhaul requirements, accomplish the following:

- 1) Ensure that the shop performing the repair/overhaul of these components has the overhaul manual available. Review this manual to ensure the following:
 - The manual is appropriate to the make and model of the components being repaired/overhauled
 - The manual is part of the operator's manual system
 - The manual is current
 - Special tool/test equipment requirements are appropriate to the work being accomplished

NOTE: For manufacturer's manuals, contact the manufacturer to verify the date and contents of last revision.

- 2) Ensure that the shops have the specialized tools/test equipment as required by the manuals.
- 3) Determine if personnel are properly trained to perform the maintenance by reviewing the

EBOOK VOLUME 12. SURVEILLANCE

training records. These records may be found in the shop or in other locations established by the operator.

4) Ensure that the operator's procedures for approval for return to service (RTS) and any other recordkeeping requirements are being followed.

NOTE: If any discrepancies are noted in any of the above procedures, notify the appropriate supervisory/management personnel to initiate corrective action.

5) Ensure that the operator has procedures that designate the individual responsible for briefing the arriving shift's supervisors and personnel of the exact status of maintenance in-progress. These procedures must also include accounting for the in-progress maintenance status in the operator's work packages.

E. Coordinate the Findings. Due to the seriousness of any finding from this job task, discuss any deficiencies with the appropriate GACA supervisory personnel to verify the inspection findings.

12.6.8.15. TASK OUTCOMES.

A. Complete the GAR.

B. Complete the Task. Completion of this task may result in a follow-up letter informing the operator of all inspection findings and corrective actions, as required.

C. Document the Task. File all supporting paperwork in the operator's office file.

12.6.8.17. FUTURE ACTIVITIES.

Follow up on corrective actions taken by the operator, as applicable.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 7. PART 125 INSPECTIONS

Section 1. Trip Records Inspection for Part 125

12.7.1.1 GACA ACTIVITY REPORT (GAR).

A. 1628 (OP)

B. 8628 (CS)

12.7.1.3. OBJECTIVE. The objective of this task is to determine whether the trip records maintained by the General Authority of Civil Aviation Regulation (GACAR) Part 125 operators are compliant. Successful completion of this task results in an indication of compliance or noncompliance in the operator's file.

12.7.1.5. GENERAL. This inspection, usually accomplished during the operations base inspection, covers the inspection of the load manifest, flight release, airworthiness release, and flight plans exclusively, as required by GACAR §§ 125.511, 125.533, 125.535 and 125.541. The original or a copy of the load manifest, flight release, and flight plans must be retained at the principal operations base for at least 30 days after their use. A record of the airworthiness release must be kept for at least 60 days after issuance. Discrepancies found during this or any inspection must be documented for future use, as items of proof in any possible enforcement investigation. If possible, make copies of items of proof for the district office and enforcement files.

12.7.1.7. PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. This task requires knowledge of regulatory requirements in GACAR Part 125, General Authority of Civil Aviation (GACA) policies, and qualification as an aviation safety inspector (Inspector) (Operations).

B. Coordination. This task requires coordination with the applicable principal inspector (PI).

12.7.1.9. REFERENCES, FORMS, AND JOB AIDS.

A. References.

EBOOK VOLUME 12. SURVEILLANCE

- GACAR Part 91 and 125

B. Forms. GAR.

C. Job Aids.

- Figure 12.7.1.1, Letter Notifying Operator of Trip Records Inspection
- Figure 12.7.4.1, Part 125 Base Inspection Job Aid (found in Section 4)

12.7.1.11. PROCEDURES.

A. Review Previous Reports. If applicable, review the office file on the operator to determine any areas requiring special emphasis during the inspection.

B. Schedule Inspection. Notify the operator of the inspection and schedule a date and time.

1) If notifying the operator in writing, use the sample letter in Figure 12.7.1.1. Include the applicable portions of Figure 12.7.4.1, Part 125 Base Inspection Job Aid to identify the scope of the inspection.

C. Conduct Trip Record Inspection. Use appropriate information from the Part 125 Base Inspection Job Aid (Figure 12.7.4.1) to check the following items required by GACAR Part 125:

1) *Load Manifest.* The operator is responsible for the preparation and accuracy of a load manifest in duplicate containing information concerning the loading of the aircraft (GACAR § 125.511(a)).

2) *Flight Release.* Compare the minimum fuel required with the fuel shown on the load manifest (GACAR § 125.533).

3) *Airworthiness Release.* Check that the method of providing information to the crew is established in the procedures and policies manual (GACAR § 125.411(b)(2)).

4) *Determine Findings.* Base decision on the items checked unsatisfactory on the pertinent portions of the Part 125 Base Inspection Job Aid.

EBOOK VOLUME 12. SURVEILLANCE

D. Debrief Operator.

- 1) Advise the operator of any areas of noncompliance found during the inspection and indicate areas which must be corrected immediately.
- 2) Prepare a letter outlining any discrepancies and the non-compliance findings for the operator. Send the original to the operator. Place a copy in the operator's office file.

12.7.1.13. TASK COMPLETION.

A. Complete the GAR.

12.7.1.15. FUTURE ACTIVITIES.

- A.** Follow-up with routine, programmed inspections to verify that the operator is now following the proper procedures.
- B.** If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies.

Figure 12.7.1.1. Letter Notifying Operator of Trip Records Inspection

GACA LETTERHEAD

DATE

[Operator name and address]

Dear [Insert Name]:

This letter is to inform you that personnel from this office will conduct an inspection of your company trip records on [date]. The purpose of this inspection is to determine that your record keeping requirements are in compliance with the provisions of GACAR §§ 125.511, 125.533, 125.535 and 125.541.

Should you have any questions concerning this inspection, please contact this office at [telephone number].

EBOOK VOLUME 12. SURVEILLANCE

Sincerely,

[GACA Inspector's signature]

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 7. PART 125 INSPECTIONS

Section 2. Crew Member Records Inspection for Part 125

12.7.2.1. GACA ACTIVITY REPORT (GAR).

A. 1627 (OP)

B. 8627 (CS)

12.7.2.3. OBJECTIVE. The objective of this task is to determine that a General Authority of Civil Aviation Regulations (GACAR) Part 125 operator is keeping the required crew member records. Successful completion of this task results in an indication in the operator's file of compliance or non-compliance.

12.7.2.5. GENERAL. GACAR § 125.531 indicates the types of crew member records which must be maintained.

A. Physical Location of Records. GACAR Part 61 and 125 indicate which documents must be maintained at the principal base of operations (unless another location is approved by the General Authority of Civil Aviation (GACA)), or carried on the crew member's person. Readable photocopies of crew member certificates, medical certificates or logbook pages should be included in the crew member records.

B. Access to Records. Records should be kept in a manner easily accessible to aviation safety inspectors (Inspectors). The method of storage is, of course, the choice of the operator, but retrieval and review should not require an extended or complicated process.

C. Inspection Authority.

1) The authority to inspect records includes the examination of records but does not require that the operator surrender records for removal from its premises, even temporarily. All examinations of company records should be conducted on the premises. Should removal of records become necessary, the operator will be given an itemized receipt for all removed records.

EBOOK VOLUME 12. SURVEILLANCE

- 2) Crew member records may be inspected as part of an overall base inspection or as a separate inspection, unrelated to others.

12.7.2.7. EMPLOYMENT RECORDS. For each crew member the operator must keep a record of any employment action, such as termination of employment, or any physical or professional disqualification. These records must be kept for at least six months after the employment action was taken or disqualification occurred. These records may be in a separate personnel file.

12.7.2.9. PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. This task requires knowledge of regulatory requirements in Part 125, GACA policies, and qualification as an Inspector.

B. Coordination. This task requires coordination with the principal inspector (PI).

12.7.2.11. REFERENCES, FORMS, AND JOB AIDS.

A. References.

- GACAR Part 1, 61, 91 and 125

B. Forms. GAR.

C. Job Aids.

- Figure 12.7.2.1, Sample Letter of Notification of Crew member Records Inspection

12.7.2.13. PROCEDURES.

A. Review Previous Reports. If applicable, review the office file on the operator to determine any areas requiring special emphasis during the inspection.

B. Schedule Inspection. Notify the operator to schedule inspection date and time.

- 1) If the operator is notified in writing, use the sample letter found in Figure 12.7.2.1.
- 2) If the operator is notified by telephone, document the conversation and put the record on the applicable operator's file.

EBOOK VOLUME 12. SURVEILLANCE

C. Pilot in Command (PIC) Records. Inspect the records of each crew member designated as pilot in command for the following items:

- 1) At least a commercial pilot certificate with instrument rating and appropriate category, class, and type ratings.
- 2) Class 1 medical certificate.
- 3) Verification that pilot meets the flight time requirements of GACAR § 125.343(b).
- 4) Initial Airman Competency/Proficiency Check Form.
- 5) Verification that the PIC meets the flight recency experience requirements of GACAR § 125.347(a).
- 6) If the PIC is a designated check airman, a Letter of Authority required by GACAR § 125.357.
- 7) A record of flight/duty time to verify the rest period requirements of GACAR § 125.425.
- 8) Any records of actions concerning the release from employment or physical or professional disqualification.
- 9) A certification per GACAR § 125.335(d) that the PIC is capable of assuming the functions of the flight engineer in an emergency in airplanes requiring a flight engineer.

D. Second-in-Command (SIC) Records. Inspect the records of each crew member designated as second in command for the following items:

- 1) At least a commercial pilot certificate with an instrument rating and appropriate category and class ratings.
- 2) Class 1 medical certificate.
- 3) Verification that pilot meets the second in command requirements of GACAR § 125.345(b).
- 4) Documents verifying that pilot meets the flight recency experience requirements of

EBOOK VOLUME 12. SURVEILLANCE

GACAR § 125.347(a).

- 5) A record of flight/duty time to verify the rest period requirements of GACAR §125.425.
- 6) Any records of actions concerning the release from employment or physical or professional disqualification
- 7) A certification per GACAR § 125.335(d) that the PIC is capable of assuming the functions of the flight engineer in an emergency in airplanes requiring a flight engineer.

E. Flight Engineer Records. Inspect the records of each crew member designated as a flight engineer for the following items:

- 1) Flight engineer certificate with appropriate class rating.
- 2) Class 2 medical certificate.
- 3) If flight engineer is a designated check airman, a Letter of Authority required by GACAR § 125.357.
- 4) Verification that flight engineer meets the flight time requirements of GACAR § 125.337(b).
- 5) A record of flight/duty time to verify the rest period requirements of GACAR §125.425.
- 6) Any records of action concerning the release from employment or physical or professional disqualification.

F. Cabin Crew Member (CCM) Records. Inspect the records of each cabin crew member to verify they meet the initial and 12-month recurrent testing requirements of GACAR § 125.351.

G. Determine Findings. Review the findings and make a determination of satisfactory or unsatisfactory.

H. Debrief Operator. Advise the operator of any areas of noncompliance found during the inspection. Indicate which crew members may not be used until the discrepancies are corrected.

I. Formal Notification. Prepare a letter of discrepancies including all non-compliance findings

EBOOK VOLUME 12. SURVEILLANCE

for signature by the Inspector and send original to the operator.

J. Complete the GAR.

12.7.2.15. TASK OUTCOMES. The completion of this task results in one or more of the following:

- Letter of discrepancies, if necessary
- Completed Non-Compliance Records, if necessary

12.7.2.17. FUTURE ACTIVITIES.

- Follow-up inspection to verify correction of discrepancies
- Routine, programmed surveillance and inspection
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies.

EBOOK VOLUME 12. SURVEILLANCE

Figure 12.7.2.1 Sample Letter of Notification of Crew Member Records Inspection

GACA LETTERHEAD

DATE

[Operator name and address]

Dear [Insert Name]:

This letter is to inform you that personnel from this office will conduct an inspection of crew member records on August 11, 2013. The purpose of this inspection is to determine that your record keeping requirements are in compliance with the provision of GACAR Part 125. Should you have any questions concerning this inspection, please contact this office.

Sincerely,

[GACA Inspector's signature]

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 7. PART 125 INSPECTIONS

Section 3. Station Facility Inspection for Part 125

12.7.3.1. GACA ACTIVITY REPORT (GAR).

A. 1617 (OP)

B. 8617 (CS)

12.7.3.3. OBJECTIVE. The objective of this task is to determine that a station facility used by a General Authority of Civil Aviation Regulation (GACAR) Part 125 operators is in compliance with the GACARs. Successful completion of this task results in an indication of compliance or noncompliance in the operator's file.

12.7.3.5. GENERAL. The regulations require that the operator not use any aerodrome unless it is adequate for the proposed operation, considering such items as size, surface, obstructions, and lighting. A station facility inspection includes, but is not limited to, the operator's compliance with these regulations.

12.7.3.7. PREPARATION FOR STATION FACILITY INSPECTION.

A. Review of Previous Inspection Reports. In order to conduct an efficient station facility inspection, the aviation safety inspector (Inspector) should review previous inspection reports for prior deficiencies. He must include in the actual inspection an analysis of the operator's policies, procedures, and instructions to personnel involved in operational control. The Inspector must also determine that these policies, procedures, and instructions result in compliance with applicable flight operations and flight release rules and related sections required by GACAR.

B. Coordination. The inspection should be coordinated with the principal inspector (PI) and any appropriate company management personnel, for example, the manager of the operator's facility.

C. Arrival and Departure Operations. The inspection should be conducted, when possible, at

EBOOK VOLUME 12. SURVEILLANCE

a time when actual arrival or departure operations are in progress so that the Inspector gets an overall view of the operation of the station and the effectiveness of the procedures and equipment used. The Inspection should be conducted in concert with company supervisory personnel to avoid any interference with operations.

12.7.3.9. PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. This task requires knowledge of regulatory requirements in GACAR Part 125, GACA policies, and qualification as an (Inspector) (Operations).

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

12.7.3.11. REFERENCES, FORMS, AND JOB AIDS.

A. References.

- GACAR Part 91 and 125

B. Forms.

- GAR

C. Job Aids.

- Figure 12.7.3.1, Station Facility Inspection Job Aid
- Figure 12.7.3.2, Letter Notifying Station Facility of Inspection

12.7.3.13. PROCEDURES.

A. Review Previous Inspection Reports. Review previous surveillance and inspection reports, if applicable, to determine areas of concern and the need for special emphasis.

B. Notification of Inspection. Notify the station or flight release office and arrange a time when the station will be handling an aircraft departure.

- 1) If notifying the station or flight release office in writing, use the sample letter in Figure 12.7.3.2. Enclose a copy of the Station Facility Inspection Job Aid and explain that it

EBOOK VOLUME 12. SURVEILLANCE

outlines what the inspection will cover.

- 2) If notifying the station by telephone, document the conversation and put the record on the applicable operator's file.

C. Brief the Operator. Before beginning the inspection, brief the station personnel on the scope of the inspection. Go over the Station Facility Inspection Job Aid and answer any questions about what will be inspected.

D. Conduct of the Inspection. Use the Station Facility Inspection Job Aid to examine the following:

- 1) Name of the operator.
- 2) Location of the facility being inspected.
- 3) Review staffing assignments with the station manager or personnel on duty. Observe the operator's routine.
- 4) Examine personnel records or observe personnel in action to determine proficiency.
- 5) Determine which personnel are responsible for completing the load manifest and mass and balance forms (may be flight crew). Review the operator's procedures for completing these forms. Review several recent forms, if available, to ensure the operator's procedures are being followed.
- 6) Determine effectiveness after observing station handle an aircraft departure.
- 7) Review flight release for items required by GACAR § 125.533 and signature of pilot in command (PIC). Observe coordination between pilot in command and flight release authority, if other than PIC.
- 8) Ensure crew receives latest pertinent notices to airmen (NOTAMs).
- 9) Ensure that PIC obtains all available weather reports and forecasts of weather phenomena that may affect the safety of flight, including adverse weather phenomena, such as clear air turbulence, thunderstorms, and low altitude windshear, for each route to be flown and each aerodrome to be used.

EBOOK VOLUME 12. SURVEILLANCE

- 10) Ensure requirements of GACAR § 91.5(a) are met and accomplished accurately.
- 11) Check for availability of line communications for obtaining required weather and flight release information if located elsewhere.
- 12) Flight following is required only if a flight plan has not been filed. If flight following is required ensure departure information is furnished to the person responsible for flight following.
- 13) Observe how the operator protects passengers from jet or prop blast, keeps passengers away from engine areas, and channels passenger movement between gate and the airplane. If the operator is departing from a sterile area, observe passenger screening procedures. If the aerodrome does not furnish these services, it is not part of this inspection.
- 14) Check condition and cleanliness of ramp surface (ice, oil, fuel spills, or other debris which would cause a hazard).
- 15) Check operator's manual for refueling procedures and observe that they are followed. Report any deficiencies in the procedures. Ensure airplane is grounded before start of refueling.
- 16) Obtain information on fire extinguisher size and inspection requirements.
- 17) Observe that ground support vehicles do not pass through the lane taken by passengers from the gate to the aircraft or interfere with ground operation of the aircraft.
- 18) Observe that loading procedures do not damage the aircraft.
- 19) Determine if the operator has procedures for checking ramp surfaces before aircraft engine operation. Observe whether these procedures are followed.

E. Station Facility Inspection Findings. Note any items marked unsatisfactory on the Job Aid. These are the areas of noncompliance.

F. Debrief Station Personnel.

- 1) Advise station personnel of any areas of noncompliance found during the inspection,

EBOOK VOLUME 12. SURVEILLANCE

indicating those items which must be corrected before any further operations can be conducted.

2) Provide a copy of the discrepancies to station personnel.

G. Complete Report. In the “Remarks” section of the Station Facility Inspection Job Aid enter the latest revision number of each manual and give details of any unsatisfactory items by line number.

H. File Report. File a copy in the GACA office file.

I. Complete the GAR.

12.7.3.15. TASK OUTCOMES. The completion of this task results in either:

- A completed Station Facility Inspection Job Aid with satisfactory and unsatisfactory items indicated.
- Non-compliance finding , if necessary
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

12.7.3.17. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, other job tasks, and/or additional coordination is required between the Inspector and the Office Manager.

EBOOK VOLUME 12. SURVEILLANCE

Figure 12.7.3.1. Station Facility Inspection Job Aid

NAME OF OPERATOR	LOCATION:		
ITEMS TO BE INSPECTED		Sat	Unsat
FACILITY:			Not Observed
A. Facility Staffing			
B. Personnel Proficiency			
C. Preparation of Load Manifests			
D. Organizational Effectiveness			
E. Flight Release Procedures			
F. NOTAM Summary			
G. Weather Reporting Procedures			
H. Flight Planning			
I. Communications			
J. Equipment/Space			
K. Flight Following Procedures			
RAMP:			
A. Public Safety Ramp/Gate			
B. Aircraft Loading Area			
C. Fueling			
D. Fire Protection			
E. Control of Ramp Vehicles			
F. Cargo Loading			
G. Foreign Object Debris (FOD) Protection			
AIRPLANE:			
A. Copy of Operations Manual (OM)			
B. Copy of Operations Specifications (OpSpecs)			
C. Copy of Operator Certificate (OC)			
D. Airplane Flight Manual			
REMARKS:			
INSPECTOR SIGNATURE:	DATE:		

EBOOK VOLUME 12. SURVEILLANCE

Figure 12.7.3.2. Letter Notifying Station Facility of Inspection

GACA LETTERHEAD

DATE

Operator Name

Operator Address

Dear [Insert Name]:

This letter is to inform you that inspectors from this office will conduct an inspection of your station facility on [date]. The purpose of this inspection is to determine that operations conducted at this facility are in compliance with GACAR Part 125.

Enclosed is a copy of a Station Facility Inspection Job Aid which outlines the areas the inspection will cover. Should you have any questions concerning this inspection, please contact this office.

Sincerely,

[Signature of Office Manager]

Enclosure

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 7. PART 125 INSPECTIONS

Section 4. Base Inspection for Part 125

12.7.4.1. GACA ACTIVITY REPORT (GAR).

A. 1616 (OPS)

B. 8616 (CS)

12.7.4.3. OBJECTIVE. The objective of this task is to determine that an operator's base of operations conforms to regulatory requirements of General Authority of Civil Aviation Regulation (GACAR) Part 125.

12.7.4.5. GENERAL. GACAR § 119.107(a) states "At any time or place, the President may conduct an inspection or test to determine whether the holder of a certificate issued under this part is complying with applicable regulations, the certificate, or the certificate holder's operations specifications".

A. Definition of Base Inspection. A base inspection is a scheduled activity that consists of a thorough review of the operator's records, procedures, and aircraft. The frequency of base inspections will depend on the number of aircraft and personnel employed by the operator, the complexity of areas of operation authorized, and the availability of aviation safety inspectors (Inspectors).

B. Conduct of Base Inspections. The General Authority of Civil Aviation (GACA) conducts base inspections of all GACAR Part 125 operators.

C. Base Inspection Coverage.

1) Base inspections will include a thorough check of the records and verification that management policies and procedures are adequate and are being followed.

2) The operator must meet the same requirements during a base inspection as for original certification.

EBOOK VOLUME 12. SURVEILLANCE

12.7.4.7. BASE INSPECTION JOB AID. The job aid found in Figure 12.7.4.1 is for use in conducting the base inspection at the principal base of operations.

12.7.4.9. PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. This task requires knowledge of regulatory requirements in GACAR Part 125, GACA policies, and qualification as an Inspector (Operations).

B. Coordination. This task requires coordination with the principal maintenance inspector (PMI).

12.7.4.11. REFERENCES, FORMS, AND JOB AIDS.

A. References.

- GACAR Part 91 and 125

B. Forms.

- GAR

C. Job Aids.

- Figure 12.7.4.1, Part 125 Operations Base Inspection Job Aid
- Figure 12.7.4.2, Letter Notifying Operator of Base Inspection

12.7.4.13. PROCEDURES.

A. Review Office Files. Before scheduling the base inspection, familiarize yourself with the operator's office file, including:

- 1) *The operating certificate and operations specifications.* Determine if they are still relevant to the operator's scope of operation.
- 2) *The procedures and policies manual.* Determine that any changes continue to show compliance with GACAR § 125.79.

EBOOK VOLUME 12. SURVEILLANCE

3) *Surveillance records and previous base inspection records.* Identify the areas of concern and the need for special emphasis.

4) *Any other material in the office file.*

B. Notification of Inspection. Notify the operator to arrange a time when appropriate management personnel and aircraft will be available for the inspection.

1) If notification is in writing, use Figure 12.7.4.2 as a guide for notifying the operator.

C. Conduct Part 125 Base Inspection. After arriving at the inspection site, brief the operator on the scope of the inspection.

D. Job Aid. Use the Part 125 Operations Base Inspection Job Aid (Figure 12.7.4.1) to brief the operator and conduct the base inspection.

E. Base Inspection Findings. Use the Part 125 Operations Base Inspection Job Aid (Figure 12.7.4.1) to determine the areas of non-compliance.

F. Debrief The Operator.

1) Advise the operator of any areas of non-compliance found during the inspection, indicating those areas which must be corrected before any further operations can be conducted.

G. Formal Notification. Prepare a letter listing the discrepancies including all non-compliance findings for the PMI's signature. Send the original to the operator; place a copy in the GACA office file on the operator.

H. Complete the GAR.

12.7.4.15. TASK OUTCOMES. The completion of this task results in either:

- A letter listing any discrepancies.
 - A completed Part 125 Operations Base Inspection Job Aid
 - Non-compliance records, if necessary
-

EBOOK VOLUME 12. SURVEILLANCE

12.7.4.17. FUTURE ACTIVITIES.

- Follow-up inspection to verify correction of discrepancies
- If enforcement action is required, follow the guidance found Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies
- Programmed, routine surveillance and inspection

EBOOK VOLUME 12. SURVEILLANCE

Figure 12.7.4.1. Part 125 Operations Base Inspection Job Aid

GACAR §	INSPECT THE FOLLOWING:	SAT	UNSAT	N/A
125.7	True copy of certificate in each aircraft			
125.31	Management Personnel Director of Operations Name: _____ Address: _____ Other management personnel (list) _____ _____ _____			
125.425	Crew Rest Period Requirements			
119.83	Complete and separate set of operations specifications maintained at base			
REQUIRED MANUALS				
125.77	Manual Current			
	Copy at principal base of operations			
	Not contrary to GACAR or Operations Specifications			
	Appropriate portions available to ground and maintenance personnel			
	Copies provided to flight crew			
125.79	Manual contents:			
	Date of last revision and number on each page			
	Management personnel names; assigned area of responsibility; and duties, responsibilities, and authority			
	Procedures for ensuring compliance with aircraft mass and balance limitations			
	Copy of operations specifications or appropriate extracted material			
	Procedures for accident notification			
	Procedures for ensuring required inspections have been performed			
	Procedures for reporting and recording mechanical irregularities			
	Procedures to be followed to determine that irregularities have been corrected or deferred			
	Procedures for release or continuation of flight and required equipment breakdown			
	Procedures for refueling			
	Procedures for PIC in passenger briefing			
	Flight locating procedures when no flight plan is filed			
	Procedures for ensuring compliance with emergency procedures			
	List of functions assigned required crew members during emergencies and emergency evacuation			
	Approved aircraft inspection program (Airworthiness)			
	Dangerous Goods procedures			
	Notification and reporting of incidents			

EBOOK VOLUME 12. SURVEILLANCE

	Procedures for the evacuation of persons who may need assistance from another person during an emergency			
	Identity of each person who will give tests and the tests authorized			
	Other procedures and policy instructions concerning the operation			
125.83	Aircraft Flight Manual			
	Current approved manual or equivalent for each type aircraft			
	Carried onboard each aircraft			
	AIRCRAFT REQUIREMENTS			
91.11	Current airworthiness certificate			
	In an airworthy condition (Airworthiness)			
	Empty mass and CG calculated from actual weighing within preceding 36 months			
125.107	Aircraft limitations			
	INSTRUMENTS AND EQUIPMENT			
125.223	Instrument and equipment specifically or otherwise required by type certificate and essential for safe operation are in operating condition			
	Instrument and equipment required by airworthiness directives are operable unless AD provides otherwise			
	Minimum Equipment List for aircraft			
	Aircraft records available to PIC include entries describing inoperable instruments and equipment			
125.202	Flight recorder data kept for at least 60 days			
Part 91, Appendix C	Radio and navigational equipment			
125.225	Two way radio communications equipment			
	Radio navigational equipment able to receive radio signals from ground facilities for VFR over-the-top			
	Under IFR or extended overwater			
91.303	Equipment for aircraft operated under IFR			
91.303	Pitot heat indication system			
91.303	Emergency equipment			
	Aircraft with seating capacity of 20 or more have:			
	One approved first aid kit			
	Dust proof and moisture proof			
	Accessible to cabin crew members			
	At takeoff, contains the contents and quantity described in 91.303			
	Crash axe accessible to crew but not accessible to passengers			
	No smoking and safety belt signs that can be turned on and off by crew member			
	Megaphones, as applicable			

EBOOK VOLUME 12. SURVEILLANCE

91.303	Emergency equipment for extended overwater operations			
	An approved life preserver with a locator light for each passenger or			
	Other than a life preserver, a flotation device which is removable			
	Life rafts to carry all occupants			
	Equipment on board life rafts			
	One life raft has a survival ELT			
91.49	Seat and safety belts			
	An approved seat or berth for each person at least two years old			
125.227	Passenger information			
	Passenger information signs			
91.225	Passenger Medical Oxygen Use			
125.465	Icing conditions operating limitations			
91.227 & 91.303	Weather radar equipment requirements			
	Weather radar installed			
	Weather radar operating satisfactorily			
	Manual procedures for inoperative radar			
CREW MEMBER REQUIREMENTS				
125.333	Airman: Limitation on Uses of Services			
125.335	Composition of Flight Crew			
125.337	Flight engineer requirements			
	Flight engineer crew members hold current flight engineer certificate			
	Flight engineer crew members meet the 50 hours in six months requirement			
125.339	Cabin Crew Members			
	Aircraft having more than 19 but less than 51 passengers have one cabin crew member			
	Aircraft having more than 50 but less than 101 passengers have two cabin crew members			
	Aircraft having more than 100 passengers have two cabin crew members plus one additional cabin crew members for every additional 50 passengers			
	Number of cabin crew members specified in operations specifications			
125.341	Emergency/emergency evacuation duties			
	Crew members assigned necessary functions			
FLIGHT CREW MEMBER REQUIREMENTS				
125.343	Crewmembers used as PIC hold:			
	At least commercial certificate			
	Appropriate category, class, type rating			
	An instrument rating			
	PIC flight experience			
125.345	Crewmembers used as SIC hold:			
	At least commercial certificate			
	Appropriate category and class ratings			
	An instrument rating			
	For IFR flight meets recent instrument experience requirements for Part 61			
	Check pilot certified crew member proficiency and qualifications			

EBOOK VOLUME 12. SURVEILLANCE

125.349	Pilot testing requirement Pilots passed 12 month written or oral test			
125.351	Cabin crew members testing requirements			
125.353	PIC instrument proficiency check Pilots passed 6 month proficiency check			
125.357	Check pilot authorization			
125.383	Approval of FSTDs			

FLIGHT RELEASE RULES

125.487	Flight release authority			
125.493	Facilities and services for additional available information			
125.489	Aircraft airworthy when released			
125.491	Communication and navigation facilities			
125.495	Aircraft are not released under VFR unless ceiling and visibility en route are and will remain at or above VFR			
125.497	Aircraft are not released under IFR or over-the-top unless weather conditions are forecasted for minimums at ETA			
125.499	Flight release under water			
125.501	Alternate aerodromes for departure			
125.503	Alternate aerodromes for destination (IFR or over-the-top)			
91.193	Landing minimums for IFR			
91.191	Takeoff and landing minimums for IFR			
125.511	Load manifests			
125.531	Crew member records			
125.535	Disposition of load manifest, flight release, and airworthiness release			

REMARKS:

EBOOK VOLUME 12. SURVEILLANCE

Figure 12.7.4.2. Letter Notifying Operator of Base Inspection

GACA letterhead

DATE

[Operator's name and address]

Dear [Insert Name]:

This is to inform you that inspectors from this office will be conducting an inspection of your GACAR Part 125 principal base of operations on [date] at [time].

Enclosed is a job aid our Inspectors will likely be using to conduct the inspection. If you have any questions, please contact this office at [telephone number].

[Inspector's signature]

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 7. PART 125 INSPECTIONS

Section 5. Surveillance of Aircraft Inspection Program for Part 125

12.7.5.1. GACA ACTIVITY REPORT (GAR).

A. GAR 3657 (AW)

12.7.5.3. OBJECTIVE. This section provides guidance for inspecting a General Authority of Civil Aviation Regulation (GACAR) Part 125 operator's Approved Aircraft Inspection Program and Engine Maintenance Program.

12.7.5.5. GENERAL. Aviation safety inspectors (Inspectors) should have knowledge of the operator's operation to include, areas of operation, type of equipment, operating history and the maintenance/inspection organization(s) with which it arranges for the performance of maintenance.

12.7.5.7. MAINTENANCE REQUIREMENTS.

A. The Aircraft Inspection Program (AIP) will be included in the operator's manual and should be referenced during the inspection.

B. Aircraft inspection programs which may be approved for use under GACAR Part 125 include, but are not limited to:

- A maintenance schedule which is a part of a current continuous airworthiness maintenance program (CAMP) approved for use by an operator under GACAR Part 121
- An inspection program currently recommended by the manufacturer of the aircraft, aircraft engines, propellers, appliances, or survival and emergency equipment
- An inspection program developed by the Part 125 operator

12.7.5.9. COORDINATION REQUIREMENTS.

A. This task requires coordination between the aviation safety inspector (Inspector) and the operator.

EBOOK VOLUME 12. SURVEILLANCE

B. It is recommended that this inspection be performed in conjunction with the maintenance records inspection.

12.7.5.11. REFERENCES, FORMS, AND JOB AIDS.

A. References.

- GACAR Parts 43, 91 and 125
- Operator's Operations Specifications (OpSpecs)
- Operator's company manual

B. Forms. GAR.

C. Job Aids. None.

12.7.5.13. PROCEDURES.

NOTE: This inspection should be completed in conjunction with Section 6, Maintenance Records Inspection for Part 125.

A. Review Office File. Review the following in the operator's office file:

1) OpSpecs Part D, to ensure that:

- Inspection program is referenced to a specific document (e.g., manufacturer's program)
- Inspection program revisions are current

2) Operator's manual to ensure that the aircraft inspection program is included and that revisions are current with OpSpecs.

B. Inspect the Operator's Facility.

1) Review the operator's copy of the applicable OpSpecs to ensure currency with office copy.

EBOOK VOLUME 12. SURVEILLANCE

2) Review the operator's copy of the aircraft inspection program to ensure currency with the following:

- OpSpecs
- Equipment list

C. Conduct Debriefings. Brief the operator on the evaluation results. Discuss any deficiencies.

12.7.5.15. TASK OUTCOMES.

A. GAR. Complete and file the GAR.

B. Task Completion. Completion of this task may result in one of the following:

- A report of any deficiencies
- A letter from the Inspector informing the operator of the results of the inspection, as required
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

C. Document Task. File all supporting paperwork in the operator's office file.

12.7.5.17. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, other job tasks, and/or additional coordination is required between the Inspector and the Office Manager.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 7. PART 125 INSPECTIONS

Section 6. Maintenance Records Inspection for Part 125

12.7.6.1. GACA ACTIVITY REPORT (GAR).

A. 3634 (AW)

B. 3649 (AW)

12.7.6.3. OBJECTIVE. This section provides guidance for inspecting an operator's aircraft maintenance records under General Authority of Civil Aviation Regulation (GACAR) Part 125.

12.7.6.5. GENERAL.

A. Aircraft Maintenance Records. Aircraft maintenance records include any records that document the performance of work on an aircraft. Aircraft maintenance records must be inspected periodically to ensure that they meet the requirements of the operator's approved recordkeeping system.

B. Surveillance Criteria. While inspecting an operator's aircraft maintenance records, principal inspectors (PIs) must determine if all the work was based on instructions, procedures, or information that has been previously approved or accepted by General Authority of Civil Aviation (GACA). Such data could be in the form of:

- Manufacturer's manuals
- Service bulletins (SBs)
- Service letters
- Data included in the operator's approved airplane inspection program
- Airworthiness Directives (Ads)
- Other accepted documents

EBOOK VOLUME 12. SURVEILLANCE

C. Personnel Identification Recording Requirements. Since GACAR Part 125 operators do not have the authorization to approve an aircraft for return to service, the name(s), address(es), and certificate number(s) of the person(s) performing the work and the person(s) approving the work must be recorded. These personnel must be listed in the operator's applicable manual.

12.7.6.7. RECORD REQUIREMENTS.

A. Retaining Airworthiness Releases. Records for each airworthiness release must be retained for at least 60 days.

B. Total Time-in-Service Records.

- 1) The total time-in-service record is a record starting from the date of manufacture and continuing through the life of the aircraft.
- 2) When a rebuilt engine is certified to zero time, the total time-in-service becomes zero (reference GACAR § 91.461). Do not confuse this with zero time since overhaul as this is referring to the current overhaul status and does not affect total time in service.

NOTE: Only the manufacturer or the manufacturer's representative can zero time an engine.

C. Life-Limited Parts. Operators must have a current record of the status of life-limited parts. This record shows the present accumulated time-in-service of each life-limited part.

D. Records of Overhaul. An operator must maintain overhaul records of any item required to be overhauled by the operator's inspection program. These records must be maintained until the work is superseded or repeated by work of equivalent scope and detail, or for one year after the work is performed.

E. Inspection Status. Inspection status defines the work that has been, and is scheduled to be performed according to the inspection program. The inspection status records should show the following:

- The time since the most recent inspection expressed in terms of hours, cycles, or calendar time
- The scheduled time and type of next inspection

EBOOK VOLUME 12. SURVEILLANCE

F. Airworthiness Directives (ADs). The operator must maintain the current status of all one-time/recurring ADs applicable to the operator's equipment. In addition to specific instructions provided in the AD, typical sources of procedures for compliance with ADs include:

- Service bulletins
- Service letters
- Approved operator/manufacturer's engineering orders or authorizations

NOTE: Only data specifically approved for AD accomplishment by the appropriate Civil Aviation Authority is authorized.

1) The surveillance of ADs should be included in all work programs. AD verification can be accomplished by the following methods:

- a) Actual surveillance of the AD being accomplished. This would also include a review of all paperwork such as Engineering Authorizations, Engineering Orders, work cards, maintenance manual references and service bulletins to ensure that the AD is properly complied with.
- b) Physical verification of previous AD accomplishment.

G. Major Repair and Major Alteration Records. Applicants are required to retain the records of each major repair/alteration to an aircraft, to include the following information:

1) Major repair records:

- A description of the work performed with approved data
- The date of completion of the work performed
- The signature, type of certificate, and certificate number of the person approving the aircraft for return to service

2) Major alteration records:

EBOOK VOLUME 12. SURVEILLANCE

- A description of the work performed with approved data
- The date of completion of the work performed
- The signature, type of certificate, and the certificate number of the person approving the aircraft for return to service

12.7.6.9. REPAIR STATION RECORDS OF WORK PERFORMED ON OPERATOR'S

AIRCRAFT. Since repair stations only have to retain records of work performed for two years, some operators have reported that maintenance records are not always available from repair stations beyond the two-year retention period. Since the operator is always responsible for obtaining and retaining the records required by the GACA, operators should be advised to require a copy of the work documentation from the repair station at the time that the work is performed.

12.7.6.11. COORDINATION REQUIREMENTS. This task may require coordination between the Inspector and the operator.

12.7.6.13. REFERENCES, FORMS, AND JOB AIDS.

A. References. GACAR Part 39, 43, 66, 91,125 and 145.

B. Forms. GAR.

C. Job Aids. None.

12.7.6.15. PROCEDURES.

NOTE: This inspection should be completed in conjunction with Section 5, Aircraft Inspection Program Inspection for Part 125.

A. Review the Office File.

B. Inspect the Maintenance Records. Ensure that the operator has retained the required maintenance/alteration/inspection records for each aircraft, including airframe, engine, propeller, and appliances. These records must include the following:

- 1) A description of the work performed (data acceptable to the GACA), including the date of completion.

EBOOK VOLUME 12. SURVEILLANCE

2) The name or other positive identification of the person approving the work.

C. Inspect the Operator's Record System. Inspect the records to ensure that manual procedures are being followed. During the inspection, document and photocopy any problem areas, obvious omissions or apparent discrepancies. The records checked should include the following:

1) *Airworthiness releases.*

- a) Ensure that the operator retains the airworthiness release records for at least 60 days.
- b) Ensure that the airworthiness release signature is authorized by the operator, per GACAR Part 43.
- c) Review the signer's training record to ensure that the person is trained to the level identified in the operator's manual.

2) *Flight/Maintenance Logs.* Obtain and review the flight/maintenance logs to determine the effectiveness of the airworthiness release procedures following scheduled inspections and non-routine maintenance. Review the records to ensure the following:

- a) Flight discrepancies are entered after each flight.
- b) Corrective actions are related to the discrepancy.
- c) Corrective actions and sign-offs are entered in the maintenance record per manual procedures.
- d) Repetitive discrepancies are handled according to the manual.
- e) Deferred maintenance as authorized by the Minimum Equipment List (MEL) is deferred per the operator's MEL and manual instructions.
- f) Required Inspection Item (RII) items are signed off per the manual instructions and that the inspector was authorized by the operator to perform the inspection.

EBOOK VOLUME 12. SURVEILLANCE

3) *Scheduled Inspections.* Select or obtain work packages for scheduled inspections and ensure the following:

- a) Scheduled inspections are properly signed off.
- b) Generated non-routine items are properly signed off.
- c) RII items are properly identified and signed off by properly authorized, qualified, certificated, and trained personnel.
- d) Repairs are categorized correctly (major or minor).
- e) Approved data is being used.

4) *Total Time-in-Service Records.* Compare the manual procedures with the actual accomplishment of the total time/cycle in service records for the airframe, engine, propeller and rotor.

- a) Select and obtain a total time/cycle-in-service record for a sample number of aircraft to ensure that cumulative flight times/cycles are added to the record.
- b) Make a spot check of the cumulative total time/cycle-in-service against the flight logs to ensure that daily entries correspond to the flight log.
- c) If the operator maintains a handwritten maintenance record for engines, compare the record entries to the aircraft flight log entries for the following:
 - Overall accuracy
 - The possible transposition of flight time/cycle-in-service, numbers, etc.

5) *Life-Limited Parts Records.* Compare the manual procedures for life-limited parts with the actual recording of the current status of life-limited parts. Select a random sample of records and ensure the following:

- a) All life-limited parts described on type certificate data sheets or in a manual referenced on the type certificate data sheets are noted.

EBOOK VOLUME 12. SURVEILLANCE

b) The current status of each part is provided, to include:

- Total operating hours/cycles accumulated
- Life-limit (total service life)
- Remaining time/cycles
- Modifications

c) The time/cycle limits on the operator's list are the same as those on the type certificate data sheets.

d) Life-limits have not been exceeded. Select a sample of life-limited items that have been installed within the last 12 months and review the records to ensure that life-limited time was carried forward from the previous service record.

e) If overhauled, the overhaul record is available.

f) The life-limit of an item has not been changed as a result of the overhaul.

6) *Overhaul Records.* Compare the manual procedures for maintaining the overhaul record with the actual overhaul record content.

a) Select a random sample of overhauled items to ensure the following:

- Overhaul records are available for those items selected
- The records contain a description of the overhaul
- The records show the time since last overhaul
- The item was overhauled per the overhaul specifications by a qualified and authorized person
- The component was approved for return to service by an authorized person

b) Review the removal/installation records of overhauled components to determine if

EBOOK VOLUME 12. SURVEILLANCE

the overhaul was accomplished within the authorized time limits. Current regulations require that these records be maintained for 1 year or until the work is superseded by work of equal scope and detail.

7) *Inspection Status Records.*

a) Compare the manual procedures for maintaining the current aircraft inspection status with available records to ensure that daily flight hours/cycles are used to obtain the current inspection status.

b) Take a random sample of aircraft inspection records to ensure that scheduled inspections times/cycles were not exceeded (overflown).

8) *One-Time/Recurring ADs.* Request a random sample of aircraft AD compliance records to ensure the following:

a) The records contain all applicable ADs for the sampled aircraft.

b) AD requirements were accomplished within the effective times of the AD.

NOTE: Special emphasis should be put on checking recurring ADs.

c) The AD record contains current status and method of compliance. The current status must include the following:

- A list of all ADs applicable to the aircraft

- The date and time of compliance

- The time and/or date of next required action (if recurring AD)

d) The record is being retained indefinitely.

NOTE: If any ADs have an alternative method of compliance, ensure that the operator has obtained prior approval for that alternative method.

e) The method of compliance is the same as specified in the AD.

EBOOK VOLUME 12. SURVEILLANCE

- f) The date of compliance is identical to the date in the current status list.
- g) The mechanic/inspector was trained properly and authorized to accomplish the work.
- h) The accomplishment was signed off properly.

9) *Major Alteration and Major Repair Records.*

- a) Compare the manual procedures for maintaining the major alteration and major repair records with the actual work records to ensure consistency with the approved procedures.
- b) Select and obtain a random sample of major repair and alteration work records to ensure the following:
 - The records contain the date of accomplishment and a brief description of the work
 - The records show that the work was accomplished according to approved data

D. Analyze the Findings. Evaluate all deficiencies to determine if corrective actions will be required.

12.7.6.17. TASK OUTCOMES.

A. GAR. Complete and file the GAR. GAR comments should include the ATA numbers of each AD verified, the type of AD verified, and the complete inspection results.

B. Task Completion. Completion of this task may result in the following:

- A letter from the PI informing the operator of the results of the inspection
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

C. Document the Task. File all supporting paperwork in the operator's office file.

EBOOK VOLUME 12. SURVEILLANCE

12.7.6.19. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, other job tasks, and/or additional coordination is required between the Inspector and the Office Manager.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 8. PART 133 INSPECTIONS

Section 1. Base Inspection for Part 133

12.8.1.1. GACA ACTIVITY REPORT (GAR).

A. 1635 (OP) (Facility Inspection)

B. 3631 (AW) (Site Inspection)

12.8.1.3. OBJECTIVE. The objective of this task is to determine whether a General Authority of Civil Aviation Regulation (GACAR) Part 133 aerial work operator continues to comply with the GACARs, their Aerial Work Operator Certificate (AWOC) and issued Operations Specifications (OpSpecs).

NOTE: See Volume 4, Chapter 6, Part 133 Administration for additional guidance.

12.8.1.5. GENERAL.

A. Authority. GACAR § 133.33 allows the General Authority of Civil Aviation (GACA) to make any inspections or tests that they consider necessary to determine compliance with the GACARs and the AWOC.

B. Preparation. Before conducting surveillance, it is important that the aviation safety inspector (Inspector) review the office file on the operator. This will give the Inspector insight into the type of operation being conducted (i.e., aerial application, rotorcraft external load, banner towing, motion picture filming, etc.). In the case of a newly certificated operator, weak areas noted in the certification report should be studied then closely examined during the inspection.

12.8.1.7. PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. This task requires knowledge of the regulatory requirements of GACAR Part 133, GACA policies and qualification as an Inspector (Operations).

EBOOK VOLUME 12. SURVEILLANCE

B. Coordination. This task requires coordination between the airworthiness and operations units.

12.8.1.9. REFERENCES, FORMS, AND JOB AIDS.

A. References.

- GACAR Part 1, 61, 91 and 133

B. Forms. GACA Activity Report (GAR).

C. Job Aids.

- Figure 12.8.1.1, Part 133 Base Inspection Job Aid

12.8.1.11. PROCEDURES.

A. Pre-Inspection Activities.

- 1) Open GAR.
- 2) Review operator's office file for currency and applicability of the following:
 - AWOC
 - Operations Specifications (OpSpecs), as applicable
 - Operations Manual (including SOPs and information concerning rotorcraft load combinations, if applicable)
 - Congested Area Plans (CAP), if applicable
 - Pilot records and evidence of knowledge and skill tests
 - Training program
 - List of authorized aircraft

EBOOK VOLUME 12. SURVEILLANCE

- Minimum Equipment Lists (MEL)
- Management Personnel
- Previous ramp inspections
- Complaints
- Operator's and pilots' violation/accident/incident histories
- Associated records of surveillance

3) Schedule the base inspection.

- a) Schedule an appointment with the operator at the home base.
- b) Advise the operator to have the management personnel and at least one other pilot (if applicable) available during the inspection.

B. Conduct the Base Inspection. Use the job aid in Figure 12.8.1.1 to assist during the inspection.

1) *AWOC*. Ensure that the AWCO is available for inspection and lists all current authorizations. The original operating certificate and all facsimiles must be identical to the copies in the GACA files.

2) *OpSpecs*. Examine the OpSpecs to determine if it is available for inspection and current.

3) *CAP*. Review the Congested Area Plan (CAP), as applicable (see Volume 4, Chapter 6, Section 3, Evaluate a Part 133 Congested Area Plan (CAP), for further guidance).

4) *Crew Members*.

a) Records that show whether or not that crew member complies with the GACAR (such as, proficiency checks, aircraft qualifications, test results, medical currency, and flight time records).

b) A record of any action taken concerning the release from employment or physical or

EBOOK VOLUME 12. SURVEILLANCE

professional disqualification of any flight crew member (records must be kept for at least 6 months).

c) In addition, for aerial application operations, each operator must maintain and keep current, at its home base of operations in the Kingdom of Saudi Arabia (KSA), the following records:

1. The name and address of each person for whom aerial application services were provided.
2. The date of the service.
3. The name and quantity of the material dispensed for each operation conducted.
4. The name, address, and certificate number of each pilot used in aerial application operations and the date that pilot met the training requirements of GACAR § 133.121(b)(2).

5) *Training and Qualifications.* Every operator must, for each person who is required to receive training, establish and maintain a record of:

- a) The person's name and, where applicable, airman certificate number, type and ratings.
- b) If applicable, the person's medical category and the expiration date of that category.
- c) The dates on which the person, while in the operator's employ successfully completed any required training or obtained any required qualification.
- d) Information relating to any failure of the person, while in the operator's employment, to successfully complete any required training or obtained any required qualification.
- e) The type of aircraft or flight training equipment used for any required training or qualification.

NOTE: An operator must retain the above mentioned records for at least 3 years.

EBOOK VOLUME 12. SURVEILLANCE

6) *Training Program.* Check the training program to see if there are any unapproved changes. Ensure that the program matches the one filed in the office file.

7) *Pilot Spot-Check.* Spot-check any available pilots. Examine the pilots verbally for competence in the following critical areas.

- Determine the pilots' understanding of the operating limitations outlined in the applicable appendix to GACAR Part 133
- Determine the pilots' knowledge of the OpSpecs, as applicable

8) *Aircraft.* Inspect the following:

- Inspect the list of authorized aircraft to ensure that it reflects the aircraft currently available for use and that the copy is identical to the most current version in the office files
- Check to see that the operator has copies of the current approved aircraft flight manual (AFM) for each aircraft

9) *Operations Manual (OM).* Examine the operations manual for currency per the list of contents in GACAR § 133.63.

10) *Management Personnel.* Ensure the Chief Pilot and Operations Manager are qualified per GACAR §§ 133.41 and 133.43.

11) *Operational Control.* Ensure a description of the operational control system required by GACAR § 133.143, is in the OM.

12) *Flight Release.* Ensure the pilot in command (PIC) has signed each flight's required flight release. The contents must include the following:

- Company or organization name
- Make, model, and registration marks of the aircraft being used
- Date of flight or series of flights

EBOOK VOLUME 12. SURVEILLANCE

- Name and duty assignment of each crew member or other person onboard
- Departure aerodrome, destination aerodromes, alternate aerodromes, and route
- Minimum fuel supply (in liters or kilograms)
- A statement of the type of operation (such as, instrument flight rules (IFR), visual flight rules (VFR)) and type of aerial work operation
- The signature of the PIC or other means of certifying acceptance

NOTE: Upon completion of the flight or series of flights, the operator must retain either the original or a copy of the flight release at its principal operations base in the Kingdom of Saudi Arabia (KSA) for at least 30 days.

13) Transportation of Dangerous Goods (TDG). If transporting dangerous goods, the operator must be authorized in accordance with GACAR Part 109. Regardless, all Part 133 operators must comply with the TDG training requirements of GACAR § 133.195.

C. Observe an On Site Operation.

If possible, observe an actual aerial work operation.

NOTE: Do not request the operator to conduct an aerial work operation unless one is scheduled.

D. Debrief Operator.

Discuss with the operator any areas needing improvement. Additionally, if applicable, discuss any areas of possible non-compliance.

E. Satisfactory Examination Results.

1) *For the Renewal.* Complete the application, prepare and issue a new certificate, and make a copy of the certificate for the Office file. If there are any changes from the initial certification or previous renewal, make a copy of the most recent certificate and indicate the changes from that copy to the current one. Indicate “satisfactory” on the base inspection job aid and place in the GACA Office file.

2) *For Follow-Up Items.* Advise the operator verbally of the deficiency and if necessary, schedule a follow-up inspection as appropriate.

EBOOK VOLUME 12. SURVEILLANCE

F. Unsatisfactory Examination Results.

- 1) Inform the operator that the inspection was unsatisfactory.

12.8.1.13. TASK OUTCOMES.

A. Complete the GAR.

B. Inspection Reports. Place the job aid and a copy of any correspondence with the operator in the office file for the operator.

C. Completion of this task can result in the following:

- Satisfactory inspection
- Communicate concerns/findings to the Director, Flight Operations Division and/or Director, Airworthiness Division, as applicable
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

12.8.1.15. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, and other job tasks are warranted.

EBOOK VOLUME 12. SURVEILLANCE

Figure 12.8.1.1 Part 133 Base Inspection Job Aid

GACAR PART 133 BASE INSPECTION JOB AID						
NAME OF OPERATOR:	INSPECTION TEAM:					
ADDRESS:	Name: _____ _____		Specialty: _____ _____			
	ITEMS INSPECTED		INSP. INITIAL	DATE	SAT	UN-SAT
1. Certificate Conforms to GACA Office Copy						
2. Management Personnel Same as Office Records						
3. Operator Uses Appropriate Aircraft:						
a. Aircraft certificated and airworthy						
4. Chief Pilot & Operation Manager:						
a. Airman and Medical Certificate, as applicable						
b. Knowledge & Skills						
5. Operation Manual (OM)						
a. Content, currency & availability						
6. Operational Control						
7. Flight Release						
8. TDG						
9. Aerial Application Operations:						
a. Inspection of load-carrying or attaching devices						

EBOOK VOLUME 12. SURVEILLANCE

b. Inspection of optional equipment installation					
c. Airworthiness Directives current					
d. Inspection of installation and function of spray or diffusion dry dispersal equipment and jettisoning device					
e. In-house or contract maintenance observed					
f. Any minimum equipment lists (MEL) current and appropriate					
g. Certificate facsimiles on board all aircraft					
10. Rotorcraft Operations:					
a. Equipped with a fixed external cargo carrying device for Class A loads					
b. Equipped with a hook for Class B and C loads					
c. Equipped with a winch or other device (note that these operations must be authorized for RHO)					
d. Placard in cabin stating the approved class or classes					
e. Marking adjacent to the load carrying device stating maximum load per the rotorcraft					
f. Installation and function of the load carrying or attaching device					
g. Optional equipment installation inspected					
h. Rotorcraft load combinations included in Operations Manual (RLCFM) and available for flight crew in the aircraft					

EBOOK VOLUME 12. SURVEILLANCE

i. Pilots understand operating limitations, hand signals and OpSpecs					
j. Operators with Class D Authorizations:					
1. OpSpecs current & available for inspection					
2. Operator uses a current GACA-Approved PLD					
3. Training records for each pilot participating in Class D operations.					
4. Operator has use of operable ground and flight communications equipment.					
11. Congested Area Operations:					
a. Operator has GACA approved plan					
b. Plan includes approval by appropriate government officials					
c. Plan provides for ATS coordination, if required					
d. Plan includes a description of the operation					
e. Plan lists all aircraft used by make and model and registration-marks, as applicable					
f. Plan lists all pilots used by name, certificate grade, and certificate number					
g. Pilots used in congested area operations meet requirements					
h. Plan includes appropriate maps, charts, and diagrams					
i. Plan has a specific method for halting operation for real or apparent hazards					

EBOOK VOLUME 12. SURVEILLANCE

j. Plan clearly describes who is conducting the operation and what is being contracted					
12. Operator Conforms to:					
a. Prohibitions on passenger carrying prohibitions, as applicable					
b. Mass and balance limits					
c. Limitations on operating without position lights, as applicable					
d. Limitations on not observing standard traffic patterns, as applicable					
13. Recordkeeping					
a. Crew Member records					
b. Training & Qualification records					
c. Flight Release					
d. Aircraft maintenance log					
e. Aerial Application Operation specific records					
f. Rotorcraft Operation specific records					
REMARKS:	<hr/> <hr/> <hr/> <hr/>				
Inspector Signature:	Date:				

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 8. PART 133 INSPECTIONS

Section 2. Ramp/Site Inspection for Aerial Application and Rotorcraft External-Load Operations

12.8.2.1. GACA ACTIVITY REPORT (GAR).

A. 1622 (OP) (Ramp Inspection-Rotorcraft External-Load)

B. 1623 (OP) (Site Inspection-Aerial Application)

12.8.2.3. OBJECTIVE. The objectives of this task are to determine whether a General Authority of Civil Aviation Regulation (GACAR) Part 133 aerial work operator conducting aerial application or external-load operations continues to comply with the GACARs, the Aerial Work Operator Certificate (AWOC) and issued Operations Specifications (OpSpecs).

NOTE: Other GACAR Part 133 operations (e.g. photography or surveying) may also be inspected using the ramp inspection guidance found in this section.

12.8.2.5. GENERAL.

A. Initiation of Activity. A ramp/site inspection may be initiated by the regular General Authority of Civil Aviation (GACA) surveillance program, as a result of complaints against the operator, or at the aviation safety inspectors (Inspectors) discretion.

B. Ramp Inspection. Timing may be a critical element in inspections. The ramp/site inspection may be an unannounced inspection or may take place by prior appointment. Often, a convenient time for conducting a ramp/site check is in conjunction with monitoring a congested area operation (see Section 3 of this chapter). For aircraft and equipment, a good approach is to conduct a normal preflight inspection, accompanied by the pilot, as though the Inspector were going to conduct the operation personally. The Inspector should not interfere with the operation or cause an unreasonable delay. However, the Inspector should examine as many items as practical of the following:

- Check the aircraft and pilot documents

EBOOK VOLUME 12. SURVEILLANCE

- Compute the mass and balance
- Check the communications equipment between all participating parties
- Check the placards, cabin, cockpit and exterior
- Ensure the pilot is knowledgeable about the operations manual, standard operating procedures (SOPs) and congested area operations, as applicable
- Ensure the pilot knows the proper method of loading, rigging, or attaching the external load

C. Site Inspection. A site is any job site other than the main base of operations; for example, a dirt strip, a field, or any other seldom used job site. Site inspections for aerial application operations should include the following:

- Check the aircraft and pilot documents
- Verify the mass and balance
- Check the communications equipment between all participating parties
- Check the placards, cabin, cockpit and exterior
- Check the equipment used for dispensing
- Conduct an inspection of the shoulder harness
- Ensure the pilot knows the correct application procedures
- Ensure the pilot knows the proper handling and disposal of substances to be dispensed
- Ensure the pilot is knowledgeable about the operations manual, SOPs and congested area operations, as applicable
- Does the pilot wear a helmet? (recommended for aerial application operations) - MIL SPEC

EBOOK VOLUME 12. SURVEILLANCE

12.8.2.7. PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. This task requires knowledge of GACAR Part 133 and GACA policies.

B. Coordination. It is optional (but desirable) to coordinate with the GACA airworthiness unit.

12.8.2.9. REFERENCES, FORMS, AND JOB AIDS.

A. References.

- GACAR Part 1, 61, 91 and 133

B. Forms. GACA Activity Report (GAR).

C. Job Aids.

- Figure 12.8.2.1, Part 133 Ramp/Site Inspection Job Aid

12.8.2.11. PROCEDURES.

A. Pre-Inspection Activities.

- 1) Open a GAR.
- 2) Review the GACA office file, including old GAR remarks.

B. Document Review. (At the inspection site)

- 1) *Pilots.* Inspect the pilots' certificates and endorsements.
 - Medical certificates must be valid and appropriate for the certificate held
 - The pilot must hold a commercial or higher grade pilot certificate with appropriate class and type ratings
- 2) *Aircraft Documents.* Inspect:

EBOOK VOLUME 12. SURVEILLANCE

- A copy of the AWOC certificate must be on board
- An approved Aircraft Flight Manual (AFM) must be on board
- An approved Rotorcraft-Load Combination Flight Manual (RLCFM) must be on board, as applicable
- Airworthiness and registration certificates must be on board

3) *Inspect other pertinent documents.*

- If the ramp inspection involves a congested area operation, examine a copy of the approved Congested Area Plan (CAP). Determine whether to combine the ramp inspection with the monitoring of the congested area operation (see Section 3 of this chapter).

C. Examine Aircraft and Equipment.

- 1) Verify the correct mass and balance.
- 2) Check placards, cabin, cockpit and exterior.
- 3) Check the cockpit.
- 4) Check the communications equipment between all participating parties.
- 5) For rotorcraft external load operations:
 - Check the attaching means and release mechanisms
 - Class A security: the presence of appropriate restraining devices Class A
 - Class B or C Security: the operation of normal and emergency releases
 - Class D security: the attachment is approved (refer to attaching device approval data)
 - For rotorcraft hoist operations (RHO):

EBOOK VOLUME 12. SURVEILLANCE

- o Check the operation of the winch cable in and out while on the ground
 - o Listen for the quality of the winch mechanism, check cable markings (worn off), frayed cable, and swivels
 - o Check the harnesses for security and wear
- 6) For aerial application operations:
 - Safe handling of substances to be dispensed and the proper disposal of used containers
 - Nearest poison control center location known (recommended)
 - Mass limit placard on hopper
 - Aircraft equipped for dispensing
 - Shoulder harness
 - Helmet - MIL SPEC (recommended)

D. Surveillance of the Ground Crew, if applicable. Verify that the ground crew was sufficiently briefed on:

- Hand signals
- Radio phraseology and procedures
- Stoppage of operation if sudden hazard appears
- Emergency procedures
- The approved CAP, if applicable

12.8.2.13. SURVEILLANCE RESULTS.

A. The Inspector should immediately advise the pilot of any unsatisfactory items the Inspector

EBOOK VOLUME 12. SURVEILLANCE

observed and inform the pilot that further operation without corrective action may constitute violation of the GACARs.

B. The Inspector may recommend an increase in the number of ramp checks for an operator with unsatisfactory items, since on-site checks are necessary to verify compliance.

C. Place the job aid and a copy of any correspondence with the operator in the GACA office file for the operator.

12.8.2.15. TASK OUTCOMES.

A. Complete the GAR.

B. Completion of this task can result in the following:

- Satisfactory inspection
- Communicate concerns/findings to Director, Flight Operations Division and/or Director, Airworthiness Division, as applicable
- Follow-up inspection for a particular discrepancy
- If compliance enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

12.8.2.17. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, or other job tasks as may be warranted.

EBOOK VOLUME 12. SURVEILLANCE

Figure 12.8.2.1. Part 133 Ramp/Site Inspection Job Aid

(Aerial Application and Rotorcraft External Load Operations)

NAME OF OPERATOR: _____ DATE: _____

INSPECTION ITEMS	INSP. INIT.	SAT	UNSAT	N/A
PILOTS				
Chief Pilot: _____ Other Pilots: _____				
1. Medical Certificates.				
2. Pilot Certificates.				
3. Logbook:				
a. Currency				
b. Recency of Operation.				
4. Knowledge of operation.				
GROUND CREW				
1. Use of hand signals.				
2. Use of radio:				
a. Procedures.				
b. Phraseology.				
3. Emergency Procedures.				
OTHER DOCUMENTS				
1. Operations Specifications.				
EQUIPMENT INSPECTION				
1. Individual protective equipment.				

 EBOOK VOLUME 12. SURVEILLANCE

2. Placards.				
3. Cabin.				
4. Cockpit.				
AIRCRAFT INSPECTION				
1. Approved AFM on board.				
2. AWOC on board.				
3. Registration on board.				
4. Airworthiness on board.				
5. General "walk around".				
OBSERVATION OF EXTERNAL-LOAD OPERATION				
1. Pilots:				
a. Smoothness of control.				
b. Minimum of load oscillation.				
c. Pickup of load.				
d. Placement of load.				
e. Altitude control.				
2. Ground crew:				
a. Handling of load.				
b. Response to situations.				
c. Communications with pilots.				

 EBOOK VOLUME 12. SURVEILLANCE

3. Rotorcraft:				
a. RLCFM on board.				
b. Attachment Means.				
c. Winch Operation (RHO only).				
d. Cables and harness.				
AERIAL APPLICATION				
1. Nearest poison control center location known (recommended).				
2. Mass placard on hopper.				
3. Aircraft equipped for dispensing.				
4. Shoulder harness.				
5. Helmet - MIL SPEC (recommended).				
6. Date of baseline cholinesterase tests.				
CONGESTED AREA OPERATION (CAP)				
1. Pilots and Ground Crew: Knowledge of CAP.				
INSPECTION RESULTS				
1. On-site debriefing.				
2. Operator debriefing.				
3. Information provided to GACA Office.				

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 8. PART 133 INSPECTIONS

Section 3. Congested Area Operations Inspection for Part 133

12.8.3.1. GACA ACTIVITY REPORT (GAR).

A. GAR 1623 (OP) (Site Inspection-CAP)

12.8.3.3. OBJECTIVE. The objectives of this task are to determine whether a General Authority of Civil Aviation Regulation (GACAR) Part 133 aerial work operator utilizing a Congested Area Plan (CAP) complies with the GACARs, the Aerial Work Operator Certificate (AWOC) and issued Operations Specifications (OpSpecs).

12.8.3.5. GENERAL.

A. Authority. GACAR § 133.33, allows the General Authority of Civil Aviation (GACA) aviation safety inspector (Inspector) to make the inspections and/or tests found necessary to ensure compliance with the GACARs and the AWOC.

B. Frequency of Surveillance. Inspectors should observe an operator's CAP in conjunction with a base/ramp/site inspection.

NOTE: See Sections 1 and 2 for additional guidance on base/ramp/site inspections.

12.8.3.7. PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. This task requires knowledge of the regulatory requirements of GACAR Part 133.

B. Coordination. It is optional (but desirable) to coordinate with the GACA airworthiness unit.

12.8.3.9. REFERENCES, FORMS, AND JOB AIDS.

A. References.

EBOOK VOLUME 12. SURVEILLANCE

- GACAR Part 1, 61, 91 and 133
- Operator's approved CAP

B. Forms. GACA Activity Report (GAR).

C. Job Aids.

- Figure 12.8.2.1, Part 133 Ramp/Site Inspection Job Aid

12.8.3.11. PROCEDURES.

A. Review CAP. Before visiting the operation site, review the CAP. Become familiar with the restrictions, limitations, and contingencies documented for this plan.

B. GAR. Open a GAR.

C. Document Review.

1) Inspect the licenses and medical certificates of any and all pilots involved in the operation.

a) Pilots must have at least a commercial certificate.

b) Pilots must have at least a Class 1 medical.

2) Inspect the airworthiness certificate and aircraft registration.

3) Determine that an AWOC facsimile is on board the aircraft.

4) Determine that flight crew members and ground personnel understand their duties and responsibilities, as indicated in the approved plan.

D. Safety Considerations. Before the operation begins, review the approved plan's safety considerations with the operator, including measures for terminating the operation in the event of an emergency or at the Inspector's discretion. The means for terminating the operation should have been established in the approved plan.

EBOOK VOLUME 12. SURVEILLANCE

E. Observe the Actual Operation. Use the approved congested area plan as a job aid to determine that the operator is in compliance. Inspectors should make themselves available to observe congested area operation. However, if they are unavailable, this should not be used to delay the operation.

F. Debrief the Operator. Discuss the positive aspects of the operation and any problems or areas of concern. If the operation was in compliance, return plan to the office file on the operator. If operation was not in compliance with the approved plan but safety was not derogated, notify the operator of the areas of non-compliance with recommendations that would ensure future compliance. If the operation was unsatisfactory, advise the operator that a non-compliance investigation may be pending.

12.8.3.13. TASK OUTCOMES.

A. Complete GAR Record.

B. Completion of this task can result in the following:

- Satisfactory inspection
- Communicate concerns/findings to the Office Manager
- Follow-up inspection for a particular discrepancy
- If compliance enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

12.8.3.15. FUTURE ACTIVITIES.

Based on inspection findings, determine if increased surveillance, additional enforcement, other job tasks, and/or additional coordination is required between the Inspector and the Office Manager.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 8. PART 133 INSPECTIONS

Section 4. Banner Towing Operations Inspection

12.8.4.1 GACA ACTIVITY REPORT (GAR).

A. 1684 (OPS)

12.8.4.3. OBJECTIVE. The objectives of this task are to determine whether a General Authority of Civil Aviation Regulation (GACAR) Part 133 aerial work operator conducting banner towing operations continues to comply with the GACARs, the Aerial Work Operator Certificate (AWOC) and issued Operations Specifications (OpSpecs).

12.8.4.5. GENERAL. Banner towing operations generally involve flight at slow speeds while towing objects external to the aircraft around or near congested areas (outdoor sports events, stadiums, racetracks, beachfronts, etc.).

A. Initiation of Activity. This activity may be initiated by the General Authority of Civil Aviation (GACA) as a result of complaints, an operator's accident/incident history, or general surveillance requirements.

B. Certificate of Waiver. In the event an operator requests relief from any of the operating rules listed in GACAR § 91.611, a certificate of waiver may be issued if the proposed operation can be safely conducted under the terms of that certificate of waiver.

NOTE: See Volume 4, Chapter 2, Section 2, Waivers and Authorizations for further guidance.

12.8.4.7. PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. This task requires knowledge of the regulatory requirements of GACAR Part 61, 91 and 133.

B. Coordination. This task may require coordination with the GACA Airworthiness Unit.

EBOOK VOLUME 12. SURVEILLANCE

12.8.4.9. REFERENCES, FORMS, AND JOB AIDS.

A. References.

- Volume 3, Chapter 5, Section 4, Special Considerations for Banner Towing Operations
- GACAR Part 1, 61, 91 and 133

B. Forms. GACA Activity Report (GAR).

C. Job Aids. Figure 12.8.4.1, Banner Towing Inspection Job Aid

12.8.4.11. PROCEDURES.

A. Pre-Inspection Activity.

- 1) Review the GACA office file. Check the authorizing OpSpecs to determine currency of aircraft type, registration marks, list of authorized pilots, and special provisions.
- 2) Coordinate with the Airworthiness Unit to inspect the aircraft, hitch, and hitch installation, if necessary.

B. GAR. Make appropriate GAR entries.

C. Conduct the Inspection. Use applicable portions of the Banner Towing Inspection Job Aid (Figure 12.8.4.1) during the inspection of the banner tow operator and the banner tow operation.

- 1) Verify that all pilots being utilized for banner tow operations for compensation or hire have at least a commercial pilot certificate and valid medical certificate.
- 2) Verify that the registration certificate, the airworthiness certificate, and a copy of the special operating limitations (restricted category) are on board the aircraft.
- 3) Inspect the banner and lead pole to ensure that:
 - The weights are secured within the lead pole and that the weights at the bottom (usually lead pellets) are secure and cannot fall out

EBOOK VOLUME 12. SURVEILLANCE

- The tow ropes are not frayed, twisted, or knotted
- The banner panels and their attachments are secure
- The tail flag is intact
- The attaching rope is the appropriate length for the operation and there is no indication of knots

4) Inspect the attaching device, or “hitch” to ensure:

- That the release cable mechanism operates easily and is snug in order to prevent premature or inadvertent release
- The hitch loop fits tight

5) Observe at least one banner pick-up and drop for pilot proficiency.

6) If a ground crew is used, ensure that a prearranged signal has been established so that the ground crew can notify the banner tow pilot of problems or malfunctions with the equipment or the banner.

D. Debrief the Operator. Inform the banner tow operator of the results of the inspection. Explain any safety-related areas that the operator and/or banner tow pilot need to correct in order to regain compliance with the AWOC and its associated special provisions.

E. Satisfactory Inspection. If the inspection is satisfactory, note the results on the job aid and the GAR.

F. Satisfactory Inspection with Minor Discrepancies. For a satisfactory inspection that revealed some discrepancies, debrief the pilot and explain the problem areas. Make a note to the GAR that there should be a follow-up inspection.

G. Unsatisfactory Inspection. Debrief the operator and/or pilot and explain the discrepancies. Refer to Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies for additional information.

EBOOK VOLUME 12. SURVEILLANCE

H. Office File. Indicate a satisfactory or unsatisfactory surveillance of the banner tow operator in the Office file. Place a copy of the Job Aid in the operator's Office file.

I. Close GAR. Make appropriate GAR entries.

12.8.4.13. TASK OUTCOMES. Completion of this task results in one or more of the following:

- Indication to the file of a satisfactory surveillance
- Indication to the file of an unsatisfactory surveillance and that a follow-up inspection is required

12.8.4.15. FUTURE ACTIVITIES.

- Possible increase in surveillance schedule
- Possible enforcement actions (see Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies for further details)

EBOOK VOLUME 12. SURVEILLANCE

Figure 12.8.4.1. Banner Towing Inspection Job Aid

Operator Name: _____

Base of Operation: _____

Names of Chief Pilot & Operations Manager : _____

Initial Application _____ Surveillance _____ Date Completed _____

Banner Towing Inspection Job Aid		Sat	Unsat	N/A
1. Application File:				
a. Verify that all aircraft are listed in the OpSpecs (make/model and registration marks). (Use back of job aid if additional space is required.) M/M = Make & Model				
M/M:	Registration #			
M/M:	Registration #			
b. List all the active pilots (certificate type and #). (Use the back of job aid if additional space is required.)				
Name:	Cert. #			
Name:	Cert. #			
Name:	Cert. #			
Name:	Cert. #			
Name:	Cert. #			

EBOOK VOLUME 12. SURVEILLANCE

2. Inspect Pilots:			
a. Certificate appropriate to operation			
b. Medical certificate appropriate to the certificate			
c. Enforcement Information			
3. Aircraft Inspection:			
a. Aircraft Flight Manual			
b. Certificate and documents			
• Registration			
• Airworthiness			
• Special Limitations (Restricted)			
c. Hitch and release mechanism			
d. Hitch installation documentation			
e. Sign mounting and light operation			
f. Placards (Restricted category)			
REMARKS:			

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 8. PART 133 INSPECTIONS

Section 5. Motion Picture/Television Filming Production Event Inspection

12.8.5.1. GACA ACTIVITY REPORT (GAR).

A. 1684 (OP)

12.8.5.3. OBJECTIVE. The objectives of this task are to determine whether a General Authority of Civil Aviation Regulation (GACAR) Part 133 aerial work operator conducting motion picture/television filming production operations continues to comply with the GACARs, the Aerial Work Operator Certificate (AWOC) and issued Operations Specifications (OpSpecs).

NOTE: Additional guidance may be found in Volume 3, Chapter 5, Section 5, Motion Picture and Television Filming Operations Authorization and Volume 4, Chapter 6, Section 6, Motion Picture and Television Filming Operations Authorization.

12.8.5.5. GENERAL.

A. Initiation of Activity. This activity may be initiated by the General Authority of Civil Aviation (GACA) as a result of complaints, an operator's accident/incident history, or general surveillance requirements.

B. Plan of Activities.

1) At least 3 days before the scheduled filming, the operator must submit a written Plan of Activities to the General Authority of Civil Aviation (GACA). This three-day notification requirement may be waived, at the discretion of the GACA, for operators who are contacted for filming at short notice. The operator must justify the exception to the 3-day requirement.

2) The Plan of Activities must include the information outlined in Volume 4, Chapter 6, Section 6, Motion Picture and Television Filming Operations Authorization.

C. Operator Responsibilities. The operator's responsibilities include, but are not limited to:

EBOOK VOLUME 12. SURVEILLANCE

- Ensuring the event is run properly, in compliance with all terms and limitations of the AWOC and its special provisions, the operations manual, and the Plan of Activities
- Being familiar with the AWOC and aware of individuals responsible for crowd control, emergency facilities, transient aircraft lookouts, etc.
- If transient aircraft enter the area, advising pilots to discontinue their activities until the transient aircraft is clear
- Ceasing operations while spectators are cleared from unauthorized areas

D. Certificate of Waiver. In the event, an operator requests relief from any of the operating rules listed in GACAR § 91.611, a certificate of waiver may be issued if the proposed operation can be safely conducted under the terms of that certificate of waiver.

NOTE: See Volume 4, Chapter 2, Section 2, Waivers and Authorizations for further guidance.

E. Unauthorized Persons. The public must be protected from unexpected occurrences during filming events. The aviation safety inspector (Inspector) should keep in mind that filming events may cause passersby to stop to watch the activities. For example, the film participants are performing a mock dogfight over a field bordered by a road. People begin to gather to watch the activities.

- 1) In this case, the Inspector may have to stop the filming production event until the operator can have the crowd moved to a non-restricted area and thereby regain compliance.
- 2) The Inspector should, therefore, suggest to the operator that crowd-control procedures of this type be included in the Plan of Activities.

12.8.5.7. INSPECTOR RESPONSIBILITIES.

A. Surveillance Responsibilities. The Inspector's responsibility is to provide adequate surveillance of the filming event and to ensure compliance with the provisions of the AWOC, associated special provisions (waivers), the operations manual (OM) and the Plan of Activities. The Inspector is not responsible for the management, control, or direction of the filming event. The Inspector should not interrupt an event except to address safety-related issues requiring

EBOOK VOLUME 12. SURVEILLANCE

immediate attention. Other Inspectors may be assigned to assist in the surveillance. However, all coordination and communication with the operator should be through the Inspector who is primarily responsible for the surveillance.

B. Inspector Authority. While not limited to the following, the Inspector generally has authority to:

- Accept changes to the effective time and date of the Plan of Activities
- Authorize additional performers to the AWOC
- Cancel or delay any or all events if deemed necessary in the interest of safety

12.8.5.9. PRE-EVENT BRIEFING. After reviewing the Plan of Activities, the Office Manager may determine that on site surveillance is required. In this case, the assigned Inspector will arrange a pre-event briefing with the operator.

A. Briefing Content. It is imperative that the briefing cover every aspect of the event. If ground-to-air signals are to be used, they must be clearly understood by all participants. The signals used to discontinue a routine or to recall participants should be emphasized.

B. Role of the Inspector. The Inspector is not responsible for conducting the briefing but must be available at the briefing for any questions concerning the AWOC and its provisions. The person designated in the Plan of Activities as being responsible for the filming event shall conduct the briefing. However, a designated representative or other person may conduct the filming event. For example, the operator or a designated representative shall handle the first briefing, while the stunt coordinator may handle an event involving an aerial dogfight.

12.8.5.11. AEROBATIC COMPETENCY. If the filming event involves aerobatic flight, then the pilots must have a GACA Statement of Acrobatic Competency.

12.8.5.13. OBSERVANCE OF FILMING EVENTS. When determining the amount of surveillance required and ensure compliance with the terms of the AWCO, the Office Manager should consider the number of aircraft, type of activity, and the potential impact on aviation safety.

A. Surveillance Team. If the Office Manager determines that the complexity of the event requires on site surveillance, at least one qualified Inspector (Operations) should be assigned to observe

EBOOK VOLUME 12. SURVEILLANCE

the filming event.

B. Surveillance Team Responsibilities. The surveillance team is responsible for assuring that the operator complies with the AWOC and the associated special provisions of motion picture/television filming area of operation.

C. Control Point. Experience has proven the value of establishing a control point where the operator, or a designated representative, can control the event. Before the event, a control point site shall be established, and the Inspector in charge shall be familiar with the location of the control point. Since the control point is an ideal location for conducting a portion of the surveillance, the Inspector shall be allowed full and easy access to and from the control point.

12.8.5.15. PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. This task requires knowledge of regulatory requirements of GACAR Part 91, Part 133 and GACA policies and qualification as an Inspector (Operations).

B. Coordination. This task may require coordination with air traffic services (ATS) and/or the Airworthiness Unit.

12.8.5.17. REFERENCES, FORMS, AND JOB AIDS.

A. References.

- GACAR Part 1, 61, 91 and 133
- Volume 3, Chapter 5, Section 5, Motion Picture and Television Filming Operations
- Volume 4, Chapter 6, Section 6, Motion Picture and Television Filming Operations Authorization

B. Forms.

- Certificate of Waiver
- Statement of Acrobatic Competency
- GACA Activity Report (GAR)

EBOOK VOLUME 12. SURVEILLANCE

C. Job Aids.

- Figure 12.8.5.1, Sample Letter of Non Acceptance of Plan of Activities
- Figure 12.8.5.2, Sample Letter of Acceptance of Plan of Activities
- Figure 12.8.5.3, Filming Production Event Job Aid

12.8.5.19. PROCEDURES.

A. Receipt of a Plan of Activities.

1. Open GAR.
 - a) Ensure that the Plan of Activities contains the items discussed in Volume 3, Chapter 5, Section 5 and Volume 4, Chapter 6, Section 6.
2. If the Plan of Activities is incomplete:
 - a) Prepare a notice of non-acceptance to the operator stating reasons for non-acceptance (Figure 12.8.5.1). Include in the letter a suspense date for submission of a corrected Plan of Activities.
 - b) Retain a copy of the Plan of Activities for future comparison.
 - c) Return the Plan of Activities with the letter of non-acceptance to the operator.
 - d) Make appropriate GAR entries.
3. If the Plan of Activities is complete, continue the task.

B. Review Office File and Plan of Activities.

- 1) Review the documents and Plan of Activities in the operator's office file to determine if the proposed filming production event can be accomplished safely.
- 2) If the filming production event cannot be safely accomplished in accordance with the AWOC, the Operations Manual, and the Plan of Activities, return the Plan of Activities to

EBOOK VOLUME 12. SURVEILLANCE

the operator with a letter of non-acceptance (Figure 12.8.5.1).

3) If the filming production event can be accomplished safely, submit the Plan of Activities to the Office Manager for determination if on-site surveillance is required.

C. On-Site Surveillance.

1) If the Director, Flight Operations Division determines that on-site surveillance is not required:

- Retain a copy of the Plan of Activities for the operator's office file
- Prepare a letter of acceptance of the Plan of Activities (Figure 12.8.5.2)
- Return the original Plan of Activities with the letter of acceptance to the operator
- Terminate the task by making appropriate GAR entries

2) If on-site surveillance is required:

- Retain a copy of the Plan of Activities for the Office file
- Prepare a notice/letter of acceptance of the Plan of Activities (Figure 12.8.5.2)
- Return the original Plan of Activities with the notice/letter of acceptance to the operator
- Make appropriate GAR entries
- Continue with the task

D. Pre-Surveillance Activities. Use the filming production event job aid (Figure 12.8.5.3) to complete the task.

1) Become familiar with the operator's area of operation and/or special provisions, the Operations Manual, the Plan of Activities, and the regulations that were waived.

2) Determine the types of equipment (e.g., VHF radio, camera) and reference materials

EBOOK VOLUME 12. SURVEILLANCE

required to conduct the surveillance.

3) For GACA teams assigned to surveillance, brief each Inspector on his duties and responsibilities. Emphasize that all contacts with the operator, or a designated representative, must be coordinated with the team leader.

E. GACA Introduction. At the site of the filming production event, introduce all members of the GACA team to the operator, or designated representative, and any other key personnel.

F. Filming Production Event Briefing. Attend and observe (all GACA surveillance personnel) the filming production event briefing.

1) Ensure that the appropriate participating personnel attend the briefing. These personnel may include:

- All participating pilots
- Stunt coordinator
- Security personnel
- Refueling personnel
- All other essential personnel

2) Ensure that the following information is covered, as appropriate, during the briefing:

- Special provisions of the AWOC, Operations Manual, and the Plan of Activities
- Aircraft parking and starting
- Taxi procedures
- Radio, communications
- Recall procedures
- Takeoff procedures

EBOOK VOLUME 12. SURVEILLANCE

- Aviation activities to be conducted during the filming production event including pyrotechnics and special effects
- Approach and landing procedures
- Emergency procedures
- Risks to participating personnel
- How to control spectators who are not part of the filming production event

G. Inspect Airman Certificates. Ensure that the participating pilots have in their personal possession:

- At least a Commercial Pilot Certificate
- A current medical certificate (except glider and balloon pilots)
- A current Statement of Acrobatic Competency, or other authorizations, if required

H. Inspect Participating Aircraft. An Inspector (Airworthiness) may conduct this inspection. Inspect the following:

- The aircraft's general condition
- The aircraft's airworthiness and registration certificates
- The operating limitations associated with Special Airworthiness Certificates
- The Operating Certificate for large aircraft (GACAR Part 121 or 125) used in sport parachuting
- The modifications to aircraft that accommodate sport parachutists and documentation of approval by the GACA. See Volume 12, Chapter 5, Section 5 for further guidance on aircraft involved in sport parachuting activities.

I. Ensure Compliance with AWOC. Inspect the filming production event site for compliance with any special provisions of the AWOC.

EBOOK VOLUME 12. SURVEILLANCE

- 1) Ensure that a control point has been established from which the operator or a designated representative can direct the filming production event, and be continuously available to GACA and the person designated responsible for the overall safety of the filming production event.
- 2) Ensure that the communications capability necessary to control the filming production event is located at the control point.
- 3) Ensure that the inspection team members have continuous access to the control point.
- 4) Ensure communications capability with participating aircraft, security, and emergency equipment.
- 5) If a discrepancy is noted, immediately bring it to the attention of the operator.

J. Observe Filming Production Event. Ensure that all provisions of the AWOC, Operations Manual, Plan of Activities, and any additional special provisions are adhered to in all cases.

- 1) If a minor problem is noted, discuss the problem with the appropriate individual during the debriefing.
- 2) If an incident that is in non-compliance with the terms of the AWOC or the GACARs, advise the operator of the actions necessary to regain compliance.
- 3) If a serious safety problem is noted, immediately bring it to the attention of the operator, or designated representative.
 - a) Observe actions taken by the operator or the designated representative to correct the safety problem.
 - b) If the problem is not or cannot be corrected, cancel or delete any or all events that affect the safety of persons or property on the ground or in the air.
- 4) Note any discrepancies and the action taken on the filming production event job aid (Figure 12.8.5.3) and document them later in the comment portion of the GAR.

K. Debrief.

EBOOK VOLUME 12. SURVEILLANCE

1) After conclusion of the filming production event, discuss with the operator, or designated representative, the following items:

- Areas of non-compliance
- Safety-related problems
- Aerobatic competency
- Opportunities for improvement

2) If no problems were encountered, advise the operator.

L. Office File. Place a copy of the following documents in the operator's office file:

- The Plan of Activities
- Record of meetings and telephone conversations
- Letter or notification copy of non-acceptance of Plan of Activities
- Letter of acceptance of a Plan of Activities
- Any job aids

M. Close the GAR.

12.8.5.21. TASK OUTCOMES. The completion of this task results in a record for the GACA office file indicating the outcome of the surveillance. This could be one or more of the following:

- Notice or letter of non-acceptance of a Plan of Activities
- Notice or letter of acceptance of Plan of Activities

12.8.5.23. FUTURE ACTIVITIES.

- Future surveillance of filming production events

EBOOK VOLUME 12. SURVEILLANCE

- Review new or revised Plan of Activities
- Possible non-compliance investigation

Figure 12.8.5.1. Sample Letter of Non-Acceptance of Plan of Activities

[GACA letterhead]

[Date]

[Name of Operator]

[Address of Operator]

Dear [Name of Operator]:

This is to inform you that the motion picture/television filming Plan of Activities submitted on [insert date] has been determined to be unacceptable for the following reasons:

[List reasons for non-acceptance]

Please make the corrections noted on the Plan of Activities and resubmit to this office within 15 days of receipt of this letter.

If you have any questions, please feel free to contact this office during regular business hours at the telephone number listed above.

Sincerely,

[Name of Operations Inspector]

Figure 12.8.5.2. Sample Letter of Acceptance of Plan of Activities

[GACA letterhead]

[Date]

[Name of Operator]

[Address of Operator]

EBOOK VOLUME 12. SURVEILLANCE

Dear [Name of Operator]:

This is to inform you that your motion picture/television filming Plan of Activities for [insert date, place] has been received, reviewed, and accepted by this office. Enclosed please find your original Plan of Activities.

If you have any questions please feel free to contact this office during normal working hours at the telephone number listed above.

Sincerely,

[Name of Operations Inspector]

Figure 12.8.5.3. Filming Production Event Job Aid

EBOOK VOLUME 12. SURVEILLANCE

SURVEILLANCE TASK	Sat	Unsat	N/A
I. PRE-SURVEILLANCE ACTIVITIES			
A. Review the following:			
1) AWOC & OpSpecs			
2) Certificates of Waiver or Authorization, if applicable			
3) Operations Manual			
4) Plan of Activities			
5) Regulations that were waived, if applicable			
B. Determine equipment needed for surveillance activities			
II. ON-SITE FILMING PRODUCTION EVENT BRIEFING			
A. Did the following personnel attend briefing?			
1) All participating pilots			
2) Stunt coordinator			
3) Security personnel			
4) Refueling personnel			
5) Other essential personnel			
B. Did the briefing cover the following items?			
1) AWOC and special provisions			
2) Operations manual			
3) Plan of Activities			
4) Aircraft parking and starting			
5) Taxi procedures			
6) Radio communications and recall procedures			
7) Takeoff procedures			
8) Aviation activities to be conducted			

EBOOK VOLUME 12. SURVEILLANCE

9) Approach and landing procedures			
10) Emergency procedures			
11) Risks to participating personnel			
12) Control of non-participating persons			
III. INSPECT AIRMAN CERTIFICATES			
Do all pilots have in their possession—			
A. At least a commercial pilot certificate?			
B. A current medical certificate (except glider and balloon pilots)?			
C. A current Statement of Acrobatic Competency, if required?			
D. Other required endorsements?			
IV. INSPECT ALL PARTICIPATING AIRCRAFT			
A. Inspect the following items for each aircraft to be used in the filming production event			
1) The aircraft's general condition			
2) The aircraft's airworthiness and registration certificates			
3) The operating limitations associated with the Special Airworthiness Certificate			
4) The operating certificate for large aircraft			
5) The modifications to the aircraft to accommodate sport parachutists and documentation of approval by the GACA			
V. INSPECT FILMING PRODUCTION EVENT SITE			
A. Does the control point for the filming production event provide:			
1) Accessibility to the Inspector and surveillance team members?			
2) Communications capability necessary to control the event?			

EBOOK VOLUME 12. SURVEILLANCE

3) Communications capability with participating aircraft, security, and emergency equipment?			
VI. OBSERVE FILMING PRODUCTION EVENT			
VII. DEBRIEFING. Discuss the following with the operator:			
A. Positive aspects of the event or things that went well			
B. Areas of non-compliance			
C. Safety-related problems			
D. Aerobatic competency			
E. Opportunities for improvement			
VIII. SURVEILLANCE RESULTS. (If unsatisfactory, explain the reasons in the Remarks section of this job aid and in the GAR.)			
REMARKS:			

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE AND INSPECTIONS

CHAPTER 9. PART 135 INSPECTIONS

Section 1. Base Inspection for Part 135

12.9.1.1. GACA ACTIVITY REPORT (GAR).

A. 1616 (OP)

12.9.1.3. GENERAL. This section contains direction and guidance to be used by aviation safety inspectors (Inspectors) for conducting base inspections of General Authority of Civil Aviation Regulation (GACAR) Part 135 operators.

12.9.1.5. DEFINITION. A base inspection is an important surveillance function which provides GACA with a comprehensive review of all of an operator's activities. It can encompass, in a single inspection, some or all of the specific inspection areas applicable to GACAR Part 135 operations that are described in Volume 12, of this handbook.

12.9.1.7. LOCATION OF INSPECTION. Unlike a station facility inspection, a base inspection is usually conducted at the operator's main base of operations or place of business. In some cases, operators may elect to retain selected records at different locations, such as at an office located in a residence, at an office building, or in portable files. The locations may differ as widely as the operator's activities differ.

NOTE: Guidance regarding station facility inspections can be found in Volume 12, Chapter 3, Section 9, Station Facilities Inspection for Part 121 and 135.

12.9.1.9. PLANNING A BASE INSPECTION. The method used to conduct a base inspection depends on the organizational structure of the operator.

A. Surveillance Activities. The size and complexity of the operations at a particular location will dictate which surveillance items are to be examined during a base inspection. A base inspection may be completed over several days or during a single visit and may often be conducted in conjunction with a proficiency or competency check. When possible, aviation safety Inspectors (Inspectors) (Airworthiness) and (Operations) should jointly conduct base inspections.

EBOOK VOLUME 12. SURVEILLANCE

B. Frequency. The frequency of base inspections for an operator is determined by the number of aircraft and personnel employed by the operator and by the complexity of the operation.

- 1) Base inspections are usually conducted as part of the annual surveillance plan.
- 2) Additional inspections may be initiated by an Inspector in response to complaints or special emphasis items directed by General Authority of Civil Aviation (GACA) senior management.

12.9.1.11. INSPECTION PREPARATION. Prior to conducting a base inspection, the Inspector should review the operator's office file to become familiar with the following information:

- Current and appropriate Air Operator Certificate (AOC)
- Current and appropriate operations specifications (OpSpecs)
- General correspondence with the operator
- Previous inspections and proficiency check records for possible problem areas, accident history, violation history
- All applicable manuals

12.9.1.13. NOTIFICATION OF INSPECTION. The Inspector should notify the operator to arrange a time when the appropriate personnel and aircraft will be available for the inspection. Notification is important if the Inspector plans to interview company personnel. In some cases, notification may be necessary for the Inspector to locate some operators, such as single operators or other small operators. After the operator has been notified of the impending base inspection, the Inspector should open a GAR record.

12.9.1.15. CONDUCT OF INSPECTION. The strategy used by an Inspector for accomplishing a base inspection depends on the size and complexity of the operator. Because operators conduct business in a variety of ways, it is not necessary to identify each item that must be examined during a base inspection. To complete a base inspection, Inspectors should examine, as a minimum, the following:

A. Operating Certificate. The inspector should examine the operator's original operating certificate, particularly the date and certificate number, and determine whether or not it matches

EBOOK VOLUME 12. SURVEILLANCE

the office copy. If the original operating certificate is not available, the inspector should determine its location and schedule a time to inspect it.

B. OpSpecs. The Inspector should review the operator's current OpSpecs. If the original OpSpecs are not available, the Inspector should determine their location and schedule a time to inspect them.

C. Required Manual. The Inspector should complete an inspection of the required manuals (Operations Manual and Maintenance Manual and SMS manuals), as applicable.

1) The Inspector should determine whether or not manual procedures are being followed by interviewing operator personnel or by observing employees in the performance of their duties.

D. Records. The Inspector should conduct the following records inspections by using the applicable guidance provided in this handbook:

- Trip Records (see Volume 12, Chapter 3, Section 2)
- Training Records (see Volume 12, Chapter 3, Section 7)
- Operations Records (see Volume 12, Chapter 3, Section 8)

E. Aircraft. If practical, the Inspector should examine, during a base inspection, the aircraft used by the operator. In addition to inspecting the aircraft to determine whether or not it is in airworthy condition, the Inspector should examine the following items for compliance:

- Airworthiness certificate and registration
- Aircraft limitations and required placards
- Approved aircraft flight manual (AFM) carried on board
- Empty mass and center of gravity (CG) calculated
- Instruments and equipment
- Operable required equipment (unless an airworthiness directive (AD) provides

EBOOK VOLUME 12. SURVEILLANCE

otherwise)

- The approved minimum equipment list (MEL) and its use as authorized by the OpSpecs (if applicable)
- Aircraft records available for inspection

NOTE: Some operators may elect to retain aircraft maintenance records at the location where maintenance is performed; this location may differ from the operator's main base of operations.

12.9.1.17. DEBRIEFING. The Inspector should plan to debrief the operator as part of the base inspection. Quite often the operator may have participated directly in the inspection and may have the capability to make corrections quickly. The following debriefing points apply:

- A. The debriefing should include both compliance and noncompliance areas. If a violation is involved, the Inspector should advise the operator that a non-compliance finding will follow.
- B. The Inspector must be clear when indicating any areas which the operator must correct before further operations can be conducted.
- C. The Inspector should advise the operator that a formal letter containing a listing of the discrepancies will be sent to the operator and made part of the permanent file.

12.9.1.19. TASK OUTCOMES.

- A. Complete the GAR.
- B. Follow-up, as applicable.

12.9.1.21. FUTURE ACTIVITIES. Normal surveillance.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE AND INSPECTIONS

CHAPTER 9. PART 135 INSPECTIONS

Section 2. Maintenance Records Inspection for Part 135

12.9.2.1. GACA ACTIVITY REPORT (GAR).

A. 3358 (AW)

12.9.2.3. OBJECTIVE. This section provides guidance for inspecting an operator's aircraft maintenance records associated with General Authority of Aviation Regulation (GACAR) § 135.239(a).

NOTE: If a GACAR Part 135 operator elects to establish and comply with a Continuous Airworthiness Maintenance Program (CAMP) in accordance with Subpart J of GACAR Part 121, see Volume 12, Chapter 6, Section 8, Monitor Continuous Airworthiness Maintenance Program (CAMP) for Part 121, for additional guidance.

12.9.2.5. GENERAL. Aircraft maintenance records include any record documenting the performance of work on an aircraft. The aviation safety inspector (Inspector) must inspect an operator's aircraft maintenance records to ensure that the records meet the requirements of the GACARs.

12.9.2.7. SURVEILLANCE CRITERIA. During surveillance of an operator's aircraft maintenance records, the Inspectors must determine that all of the work was based on instructions, procedures, or information that has been approved previously or accepted by the General Authority of Civil Aviation (GACA). Such data could be in the form of:

- Operator's maintenance manual (MM)
- Manufacturer's manuals
- Service Bulletins (SB)
- Service Letters (SL)
- Data included in the operator's approved inspection and/or maintenance programs

EBOOK VOLUME 12. SURVEILLANCE

- Approved engineering orders or authorizations
- Airworthiness Directives (AD)
- Other accepted documents

12.9.2.9. MAINTENANCE RECORDKEEPING REQUIREMENTS. GACAR § 91.457 details maintenance recordkeeping requirements for the following:

- 1) Records of the maintenance, preventive maintenance, and alteration and records of the 100-hour, annual, progressive, and other required or approved inspections, as appropriate, for each aircraft (including the airframe) and each engine, propeller, rotor, and appliance of an aircraft.
- 2) Current status of applicable Airworthiness Directives (AD), including the date and method of compliance, recurring AD actions, and the time and date when the next action is required.
- 3) Maintain total time in service records for airframe, engines, propellers, and rotors.
- 4) Current status of life-limited parts of each airframe, engine, propeller, rotor, and appliance.
- 5) Time since last overhaul of all items installed on the aircraft which are required to be overhauled on a specified time basis.
- 6) Current inspection status of the aircraft, including the time since the last inspection required by the aircraft inspection program under which the aircraft and its appliances are maintained.
- 7) Copies of the forms prescribed by GACAR § 43.11(a) for each major alteration and major repair to the airframe and currently installed engines, rotors, propellers, and appliances.

12.9.2.11. TOTAL TIME-IN-SERVICE RECORDS. Per GACAR § 91.457(a)(2)(i), total time in service continues for the life of the aircraft. Engine rebuilding and certifying to zero time in service must not be confused with a zero time since overhaul certification. Zero time since overhaul certification does not affect the calculation of total time in service. When an engine is rebuilt to zero time, the total time in service is zero.

EBOOK VOLUME 12. SURVEILLANCE

12.9.2.13. LIFE-LIMITED PARTS. Per GACAR § 91.417(a)(2)(ii), operators must have the current status of life-limited items. This record indicates the present accumulated time in service of each life-limited item. The operator must be able to verify the accumulated time in service of all life-limited items. This is done by providing records for the item showing each segment of its operation in service since its manufacture. This may be accomplished by one of the following:

- A record audit trail providing a record of the time in service of the item
- A time audit trail providing a record of continuous time in service

12.9.2.15. RECORDS OF OVERHAUL. Per GACAR § 91.417(a)(2)(iii), an operator must maintain overhaul records of any item required to be overhauled by the operator's inspection or maintenance program. These records must be maintained until the work is superseded or repeated by work of equivalent scope and detail.

12.9.2.17. INSPECTION STATUS. Per GACAR § 91.457(a)(2)(iv), inspection status defines the work that has been and is scheduled to be performed IAW the inspection or maintenance program. The inspection status records must show the following:

- Type of most recent inspection
- The time at which that inspection was performed
- The time since the most recent inspection expressed in terms of hours, cycles, or calendar time,
- The scheduled time and type of the next inspection

12.9.2.19. AD STATUS. PER GACAR § 91.457(a)(2)(v), an operator must maintain the current status of all applicable ADs for the operator's equipment.

12.9.2.21. MAJOR ALTERATIONS AND MAJOR REPAIRS. An operator is required to retain major alteration and repair records.

12.9.2.23. REPAIR STATION RECORDS OF WORK PERFORMED ON OPERATOR'S AIRCRAFT.

A. GACAR Part 145 repair stations performing work for operators are required by regulations to accomplish the work IAW the operator's maintenance program.

EBOOK VOLUME 12. SURVEILLANCE

B. Repair stations are required to retain records of work for 2 years. Some operators have reported that maintenance records are not always available from repair stations beyond the 2-year retention period. To avoid this situation, operators should be advised to require a copy of the work documentation from the repair station at the time that the work is performed. The operator is always responsible for obtaining and retaining these records required by the GACAR.

12.9.2.25. PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. Familiarity with the type operation being inspected.

B. Coordination. This task requires coordination between the Inspector and the operator.

12.9.2.27. REFERENCES, FORMS, AND JOB AIDS.

A. References. GACAR Part 39, 43, 66, 91 and 135.

B. Forms. GAR.

C. Job Aids. None.

12.9.2.29. PROCEDURES.

A. Schedule Inspection.

B. Review Office File.

C. Inspect Maintenance Records. The recordkeeping should provide an acceptable method for creating, preserving, and retrieving required records. All records must contain the following:

- Description of the work performed (or reference to data acceptable to the GACA)
- The date of completion of the work performed
- The signature and certificate number of the person approving the aircraft for return to service (RTS)

1) *Airworthiness Records.* Ensure that the records as described in GACAR § 91.457(a)(1)

EBOOK VOLUME 12. SURVEILLANCE

are retained for 1 year after the work is performed or until repeated or superseded by other work.

2) *Total Time in Service.*

- a) Determine the method of recording total time in service of the airframe, engine, propeller, and rotor. This record must show the current time in service appropriate parameter.
- b) Determine if this record is retained until the aircraft is sold and is transferred with the aircraft upon sale.

3) *Status of Life-Limited Parts.*

- a) Ensure that the operator is tracking the current status of life-limited parts for each airframe, engine, propeller, rotor, and appliance.
- b) Determine if this record is retained until the aircraft is sold and is transferred with the aircraft upon sale.

4) *Time Since Last Overhaul of All Items Required to be Overhauled.* This document must accompany the aircraft when transferred.

5) *Overhaul Records.* Ensure that the manual describes how the operator documents the last complete overhaul of each engine, propeller, and rotor. The overhaul records should be retained until the work is superseded by work of equivalent scope and detail. The overhaul record may include:

- Disassembly data
- Dimensional check data
- Replacement parts list
- Repair data
- Reassembly/test data

EBOOK VOLUME 12. SURVEILLANCE

- Reference to data including overhaul specifications

6) *Current Aircraft Inspection Status.*

a) Determine how the operator records the time in service since the last inspection.

b) Determine if procedures ensure that this record is retained until the aircraft is sold and is transferred with the aircraft upon sale.

7) *AD Compliance.* Determine how the operator complies with recordkeeping requirements of the ADs, including emergency ADs. Ensure that there is a record containing the following items:

a) Current Status.

- The AD number and revision date
- A list of all ADs applicable to the aircraft
- Date and time of compliance
- Time and/or date of next required action (if it is a recurring AD)

b) Method of Compliance. This includes either a record of the work performed or reference to the applicable section of the AD.

c) Determine if this record is retained until the aircraft is sold and is transferred with the aircraft upon sale.

8) *Major Alteration Records.* Determine how the operator maintains the records of major alterations to each airframe, engine, propeller, rotor, and appliance.

D. Analyze Findings. Evaluate all deficiencies to determine if corrective actions will be required.

E. Debrief Operator. Advise the operator of deficiencies discovered during the inspection and discuss how to resolve them. Advise the operator of potential risk factors that may indicate an inadequate maintenance recordkeeping system and/or a deficient maintenance program. Advise the operator that any systemic operator deficiencies may warrant additional surveillance.

EBOOK VOLUME 12. SURVEILLANCE

12.9.2.31. TASK OUTCOMES.

A. GAR. Complete the GAR Record.

B. Task Completion. Completion of this task can result in the following:

- Satisfactory inspection
- Communicate concerns/findings to your supervisor
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance and Enforcement

C. Task Documentation. File all supporting paperwork in the operator's office file.

12.9.2.33. FUTURE ACTIVITIES.

Based on inspection findings, determine if increased surveillance, additional enforcement, other job tasks, and/or additional coordination is required between the Inspector and the Office Manager.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE AND INSPECTIONS

CHAPTER 9. PART 135 INSPECTIONS

Section 3. Surveillance of an Aircraft Inspection Program for Part 135

12.9.3.1. GACA ACTIVITY REPORT (GAR).

A. 3637 (AW)

12.9.3.3. OBJECTIVE. This section provides guidance in inspecting an Approved Aircraft Inspection Program (AAIP) when utilized by an operator under General Authority of Civil Aviation Rules (GACAR) Part 135.

12.9.3.5. GENERAL.

A. Inspection. This inspection can be conducted as a result of the following.

- An annual work program requirement
- As part of a continuous surveillance activity
- Reported problems with the operator (complaint, Service Difficulty Report (SDR), accident, etc.)
- Requested by GACA management

B. Compliance. GACAR §135.239(a)(1) requires operators to comply with either the inspection and recordkeeping requirements of GACAR Part 91 or an AAIP may be used to meet those inspection requirements. Although this is in accordance with (IAW) GACAR § 135.245, the additional maintenance requirements in GACAR § 135.249 must still be met.

C. Recordkeeping System. Inspectors should review the operator's recordkeeping systems for its adequacy in effecting timely corrections of recordkeeping errors. Aviation safety inspectors (Inspectors) should also give special attention to recordkeeping errors that may indicate deficiencies in the operator's maintenance program.

12.9.3.7. REFERENCES, FORMS, AND JOB AIDS.

EBOOK VOLUME 12. SURVEILLANCE

A. References:

- GACAR Part 43, 66, 91and 135
- Operations Specifications (OpSpecs)
- Operator's maintenance manual/ inspection program

B. Forms. GAR

C. Job Aids. None.

12.9.3.9. PROCEDURES.

A. Review the Operator Files.

Review the following:

1) *OpSpec D73, Approved Aircraft Inspection Program.* Ensure the following, when use of OpSpec D73 is applicable:

- All aircraft under this program are listed by make, model, serial, and registration marks
- The program being used is identified

2) *Operator's Maintenance Manual.* Review the following, when use of the manual is applicable:

- Procedures for approving an aircraft for return to service after inspections and non-routine maintenance
- Procedures for conducting inspections
- Procedures to ensure that the recordkeeping requirements of GACAR § 91.457 are met

B. Perform an Onsite Inspection.

1) *Inspect the Aircraft Maintenance Records.* Ensure that records meet the requirements of

EBOOK VOLUME 12. SURVEILLANCE

GACAR § 91.457 including:

- A description of work performed or reference to acceptable data
- The signature and certificate number of the person approving return to service

2) *Inspect the Aircraft.* Inspect the operator's aircraft to ensure that the aircraft:

- Conform to the type design
- Are properly registered and certificated
- Are properly equipped per GACAR Part 91 and 135
- Are in condition for safe operation

3) *Review Recordkeeping.* Ensure that the operator's recordkeeping system is adequate and indicate the following:

- Maintenance performed complies with GACAR Part 43
- Maintenance is recorded in maintenance records
- Operator maintenance programs are adequate

4) *Inspect the Facilities.* Inspect the maintenance facility used by the operator to ensure that the operator's aircraft can be safely maintained.

5) *Review the Inspection/Maintenance Program.* Per GACAR § 135.245, the AAIP must contain the following:

- 1) Instructions and procedures for the conduct of aircraft inspections (which must include necessary tests and checks), setting forth in detail the parts and areas of the airframe, engines, propellers, rotors, and appliances, including emergency equipment, that must be inspected.
- 2) A schedule for the performance of the required aircraft inspections expressed in terms of the time in service, calendar time, number of system operations, or any combination

EBOOK VOLUME 12. SURVEILLANCE

of these.

3) Instructions and procedures for recording discrepancies found during inspections and correction or deferral of discrepancies including form and disposition of records.

4) The aircraft inspection program must observe human factors principles.

C. Debrief the Operator. Debrief the operator of all findings. Advise the operator of deficiencies discovered during the inspection and discuss how to resolve them.

12.9.3.11. TASK OUTCOMES.

A. Complete the GAR Record.

B. Completion of this task can result in the following:

- Satisfactory inspection
- Communicate concerns/findings to the Director, Airworthiness Division
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance and Enforcement

C. Document the Task. File all supporting paperwork in the operator's office file.

12.9.3.13. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, other job tasks, and/or additional coordination is required between the Inspector and the Office Manager.

EBOOK VOLUME 12. SURVEILLANCE

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EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE AND INSPECTIONS

CHAPTER 11. PART 141 INSPECTIONS

Section 1. Pilot School Facility Inspection for Part 141

12.11.1.1. GACA ACTIVITY REPORT (GAR).

A. 1640 (OP)

B. 3650 (AW)

12.11.1.3. OBJECTIVE. The objective of this surveillance task is to determine whether a General Authority of Civil Aviation Regulation (GACAR) Part 141 pilot school continues to comply with the applicable regulations. Successful completion of this task results in an indication of a satisfactory or an unsatisfactory inspection.

12.11.1.5. GENERAL. The initiative for this task comes from the annual surveillance work program. Facility inspections are always conducted during the initial certification of a pilot school and at 24-month intervals during the certification renewal. They also may be conducted during spot checks initiated for quality control purposes. A facility inspection generally covers all areas pertinent to the certificate.

12.11.1.7. GUIDELINES FOR CONDUCTING FACILITY INSPECTIONS.

A. Coordination. When an aviation safety inspector (Inspector) (Airworthiness) cannot attend the facility inspection, the Inspector (Operations) should tailor the inspection to examine the aspects the airworthiness aspects of the inspection. For example:

- 1) The Inspector should be prepared to examine any available aircraft.
- 2) The Inspector (Operations) should coordinate with the principal inspector (PI) to ensure follow-up inspections of any items outside of the Operations Inspector's expertise.

B. Presence of Chief Instructors and Other Instructors During an Inspection. Spot check the knowledge and skill of the instructors that a school uses. Spot checks of instructors are necessary to verify continuing compliance and to ensure that the chief instructors are fulfilling

EBOOK VOLUME 12. SURVEILLANCE

their responsibilities in standardizing instruction.

C. Discrepancies Between General Authority of Civil Aviation (GACA) Files and Operator Files. When a discrepancy is found between GACA records kept on the operator and records maintained by the operator, the Inspector determines which set of records is current, approved, and correct. The outdated records must be brought up to date. For example, if the operator's records indicate a change in address of the base of operations that the GACA was not aware of, the GACA records should be revised to reflect the correct address.

12.11.1.9. PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. This task requires:

- Knowledge of the regulatory requirements of GACAR Part 141 and GACA policies

12.11.1.11. REFERENCES, FORMS, AND JOB AIDS.

A. References.

- GACAR Parts 1, 61, 91, and 141

B. Forms. GAR.

C. Job Aids.

- Figure 12.11.1.1, Letter Informing School of Facility Inspection
- Figure 12.11.1.2, Letter Confirming Results of Inspection
- Figure 12.11.1.3, Part 141 Facility Inspection Job Aid

12.11.1.13. PROCEDURES.

A. Conduct Pre-Inspection Activities.

- 1) Determine the need for the inspection.
 - a) Is the inspection scheduled on the annual surveillance plan?

EBOOK VOLUME 12. SURVEILLANCE

- b) Is the inspection the result of complaints?
- 2) Determine if the inspection is to be conducted with or without notice to the school.
 - a) If the inspection is to be conducted with notice to the school, notify the school in writing of the day, time, and nature of the inspection (Figure 12.11.1.1).
 - b) If the inspection is to be conducted without notice to the school, schedule the day and time.
- 3) Review the office file for complaints, previous enforcement history, accident/incident history, previous facility inspections and surveillance reports.

B. Open the GAR.

C. Conduct Facility Inspection.

- 1) Determine if the following documents are current, complete, and accurate (during a renewal inspection a sampling may be sufficient):
 - School certificate (GACAR § 141.27)
 - List of approved courses
 - Facility use agreement
 - Type of advertisement (GACAR § 141.31)
 - Chief/Assistant Instructor records
 - Flight Instructor records
 - Student records (GACAR §§ 141.153 and 141.163)
 - Enrollment certificates (GACAR § 141.151)
 - Graduation certificates (GACAR § 141.153)

EBOOK VOLUME 12. SURVEILLANCE

- Aircraft records (including aircraft checklist)
- Training Course Outline (TCO) revisions (must match revisions in the GACA file)

2) Inspect the following physical facilities and equipment for compliance:

- Aerodrome (GACAR § 141.61)
- Aircraft (airworthiness)
- Ground trainers and training aids (GACAR § 141.65)
- Pilot briefing areas (GACAR § 141.67)
- Ground training facilities (GACAR § 141.69)

3) Check these additional points:

- Compliance with provisions of GACAR § 141.141
- Flight instruction (GACAR § 141.143).
- Quality of instruction (GACAR § 141.91 and 141.93)
- Chief Instructor's duties and responsibilities (GACAR §§ 141.53 and 147)

D. Follow Procedures for a Satisfactory Facility Inspection. If the facility inspection is satisfactory, indicate the outcome on the job aid (Figure 12.11.1.3).

E. Follow Procedures for an Unsatisfactory Facility Inspection.

1) If the facility inspection was unsatisfactory inform the applicant immediately of the discrepancies.

- a) Advise how to correct any deficiencies or discrepancies.
- b) Confirm the findings in writing (Figure 12.11.1.2), including a suspension date for correction of deficiencies.

EBOOK VOLUME 12. SURVEILLANCE

- c) Note the outcome on the job aid.
- d) Ensure that the job aid is included in the office file.

F. Conduct Post-Inspection Actions. Discuss any findings discovered during the inspection with the school. Bring areas that need improvement to the attention of the school.

G. Close the GAR.

12.11.1.15. TASK OUTCOMES.

A. Complete GAR.

B. Completion of this task can result in the following:

- Satisfactory inspection
- Communicate concerns/findings to the Office Manager
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

12.11.1.17. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, other job tasks, and/or additional coordination is required between the Inspector and the Office Manager.

Figure 12.11.1.1 Letter Informing School of Facility Inspection

GACA Letterhead

[date]

[school name and address]

Dear [name]:

EBOOK VOLUME 12. SURVEILLANCE

Inspectors from this office will conduct an inspection of your pilot school at [time] on [date]. The purpose of this inspection is to determine whether your school is operating in accordance with GACAR Part 141.

Enclosed is a copy of the inspection job aid for your review. This job aid will be used to assist us in conducting the inspection. If you have any questions, please contact this office [telephone number].

Sincerely,

[Inspector's signature]

Figure 12.11.1.2 Letter Confirming Results of Inspection

GACA Letterhead

[date]

[school name and address]

Dear [name]:

The results of the inspection of your pilot school conducted on [date] are as follows:

- [insert result]
- [insert result]
- [insert result]

Sincerely,

[Inspector's signature]

[Figure 12.11.1.2 Part 141 Facility Inspection Job Aid]

EBOOK VOLUME 12. SURVEILLANCE

NAME OF SCHOOL:	Address:			
	Inspector:		Specialty:	
ADDRESS:	Date	Sat	Unsat	N/A
1. TCOs				
a. Current				
b. Conforms to GACA's copy				
c. All changes are GACA approved				
2. Verification of flight instructor's qualifications				
3. Chief instructor/assistant for each course				
4. Enrollment procedures conform to GACAR § 141.151				
5. Copies of enrollments sent to GACA office				
6. Safety procedures/practices as per GACAR § 141.151				
7. Graduation certificates as per GACAR § 141.153				
8. Recordkeeping as per GACAR § 141.163				
9. Minimum equipment lists (MEL) current (if applicable)				
10. Aircraft meet requirements of GACAR § 141.63/141.139				
11. Chief instructor standardization of all instructors				
12. Pilot briefing areas (GACAR § 141.67)				
13. Ground training facilities (GACAR § 141.69)				
14. Aerodromes (GACAR § 141.61)				
15. Flight Simulation Training Devices (GACAR § 141.65)				
16. Training aids (GACAR § 141.65)				
17. Air agency certificate matches one on file				
18. List of current approved courses				
19. Other				
REMARKS:				

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE AND INSPECTIONS

CHAPTER 11. PART 141 INSPECTIONS

Section 2. Pilot School Aircraft Inspection for Part 141

12.11.2.1. GACA ACTIVITY REPORT (GAR).

A. 3650 (AW)

12.11.2.3. OBJECTIVE. This section provides guidance for conducting surveillance of a General Authority of Civil Aviation Regulation (GACAR) Part 141 pilot school to ensure that aircraft, programs and systems are in compliance with the GACARs.

12.11.2.5. GENERAL.

A. It is of the utmost importance that training aircraft be properly maintained. Minor malfunctions that may be controlled by an experienced pilot could place the relatively inexperienced student pilot in a critical situation.

B. Training aircraft are subject to greater wear and deterioration because of frequent takeoffs and landings. This is particularly true in aircraft with retractable gear. The engines of training aircraft are also very vulnerable to overheating and rapid cooling damage.

12.11.2.7. PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites.

- Knowledge of the regulatory requirements of GACAR Part 21, 43, 66, 91, and 141
- Familiarity with the type of equipment to be used by applicant

B. Coordination. This task will require coordination between the aviation safety inspectors (Inspector) (maintenance and operations).

12.11.2.9. REFERENCES, FORMS, AND JOB AIDS.

EBOOK VOLUME 12. SURVEILLANCE

A. References. GACAR Part 21, 43, 66, 91, and 141.

B. Forms. GAR.

C. Job Aids. None.

12.11.2.11. PROCEDURES.

A. Review any General Aviation Alerts/Weekly Summaries. Review for trends and problem areas regarding the make(s) and model(s) of aircraft the operator is using in the training program.

B. Inspect the Aircraft.

1) Ensure the following:

- The aircraft is properly certificated
- The airworthiness certificate and registration are properly displayed
- The aircraft is in an airworthy condition for safe operations
- The aircraft are equipped to perform functions appropriate for the course of training

2) Ensure that the equipment installed in aircraft to be used for radio navigation and instrument training is operational and complies with the minimum requirements of GACAR Part 91.

C. Inspect the Aircraft Maintenance Records.

a) Inspect the aircraft maintenance and alteration records to determine whether aircraft have a current, appropriate inspection, and meeting GACAR requirements. Ensure compliance with applicable Airworthiness Directives (AD) and life-limited parts requirements.

b) Ensure that current mass and balance information is available to the pilot of the aircraft.

D. Inspect the Maintenance Facilities. Ensure that the school has access to facilities and equipment sufficient to maintain the school's aircraft.

EBOOK VOLUME 12. SURVEILLANCE

E. Inspect Contract Agencies. If the operator uses contractors, such as repair stations, to perform maintenance, (refer to Volume 6, Chapter 13).

F. Analyze Results. Review the inspection findings and determine whether the operation is in compliance with regulations.

12.11.2.13. TASK OUTCOMES.

A. Complete the GAR.

B. Completion of this task can result in the following:

- Satisfactory inspection
- Communicate concerns/findings to the Office Manager
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

12.11.2.15. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, other job tasks, and/or additional coordination is required between the Inspector and the Office Manager.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME12. SURVEILLANCE AND INSPECTIONS

CHAPTER 12. PART 142 INSPECTIONS

Section 1. Training Center, Satellite and Remote Site Inspection for Part 142

12.12.1.1. BACKGROUND. The General Authority of Civil Aviation (GACA) has regulatory oversight responsibility for certificated General Authority of Civil Aviation Regulations (GACAR) Part 142 training centers and the task of determining if a training center continues to meet the requirements of their initial certification. A comprehensive surveillance plan will enable the aviation safety inspector (Inspector) to:

- Determine each operator's compliance with regulatory requirements and safe operating practices
- Detect changes as they occur in the operational environment
- Detect the need for regulatory, managerial, and operational changes
- Measure the effectiveness of previous corrective actions and focus on the certificate holders' ability to continue to offer the training, testing, and checking authorized by its certificate and training specifications

12.12.1.3. PROCEDURE.

A. Policies and Procedures.

1) Observation of Training Programs. Inspectors will schedule periodic observations of approved curricula and/or courses to ensure that each curriculum is being conducted in accordance with its current approval and to ensure the courseware originally or subsequently approved for the specific curriculum is being appropriately utilized.

2) Advertising. Ensure that the training center certificate holders which conduct public advertising adheres to the following:

- a) Distinguishing Types of Training. A training center may not advertise to conduct any training that is not approved by GACA if that training is designed to satisfy any

EBOOK VOLUME 12. SURVEILLANCE

requirement of the GACAR. However, training that is not related to, or designed to satisfy a GACAR requirement may be advertised by a training center providing such advertising is clearly distinguished as not being GACA-approved or part of the training center's approved curricula.

b) Accuracy of Statements. A training center may not make any statement relating to its certification that are false or designed to mislead any person contemplating enrollment. The training center must clearly differentiate between courses that have been approved and those that have not.

c) Curricula or course naming conventions.

1. GACAR Part 142 training centers may not advertise or hold out to the public that they have an approved curriculum that meets a certificated air operator's requirement's, such as GACAR Parts 121, 125, or 135. For example, centers *may not* advertise that they have an approved GACAR Part 121/125/133/135 pilot training curriculum, course, or program.

2. GACAR Part 142 training centers *do not* hold a certificate authorizing GACAR Part 121, 125 or part 135 operations, and may not have its training programs approved in accordance with those parts. Training center curricula are approved under GACAR Part 142 and as such, the approved curricula must meet the requirements of that part.

3. The fact that a GACAR Part 121, 125, 133 or 135 operator adopts the training center's curriculum as its own, does not give the training center the authority to advertise or promote itself as having a GACAR Part 121, 125, 133 or 135 training program. Rather, the training center is limited to the authority granted in GACAR Part 142, and may only describe its training programs as having been approved for use in some GACAR Part 121, 125, 133 or 135 operations.

4. Training centers may advertise that they have courses *designed to meet* other regulatory requirements, but they cannot advertise that they have GACA-approved courses that meet the regulatory requirements outside of those authorized by their GACAR Part 142 certificate.

d) Surrender of Certificate. When a training center certificate has been surrendered,

EBOOK VOLUME 12. SURVEILLANCE

suspended, revoked, or has expired (foreign certificate holders only), the center must remove all indications of GACA approval and cease advertising that the training center is certificated by GACA. The center must remove all advertising signs and cancel radio, television, newspaper, magazine, billboard, and other associated advertisements for the training center.

e) Suspending or ceasing operations at a particular facility. A training center, satellite, or remote site that suspends or ceases operations at a particular facility must promptly remove all signs indicating that a GACA-approved center is located at that facility.

4) *Flight Simulation and Flight Training Devices (FSTDs)*. Evaluate the following areas for compliance with program approval and training specifications authorizations: (GAR codes 1630 and 1654.)

- Functional evaluations
- Accurate replication of the aircraft type for the curriculum in which used
- Logbook or other use records
- Simulator component inoperative guide (SCIG), if developed
- Discrepancy and/or maintenance logbooks to determine if any recorded item would or would not have affected the training, checking, or testing conducted
- Records of daily preflight to determine if discrepancies are being recorded and if maintenance is deferred on any discrepancies that would affect training, checking or testing
- Training specifications to ensure all flight simulators and FSTDs have been properly authorized and approved
- When installed, inspect oxygen masks, smoke goggles, and audio control panels to ensure proper operation
- Randomly select operational functions of authorized FSTDs and simulators to ensure their initial qualification standards are being maintained

EBOOK VOLUME 12. SURVEILLANCE

- 5) *Facilities.* Ensure that the center's OpSpecs list all satellite training centers and their remote training sites.
- 6) *Center Training Records.* The center's record keeping processes must contain a quality program that enables responsible managers and/or personnel to evaluate the accuracy and adequacy of the record keeping system. This process must include at least the following elements/procedures:
- A review to determine compliance with the approved training program. Each record must show a chronological record of the students' participation in the training program, as required by GACAR § 142.91 recordkeeping requirements.
 - An evaluation to ensure that the student prerequisites for entry into training were verified and documented.
 - A review of the instructor and evaluator records to determine compliance with the requirements of GACAR § 142.91.
 - A review of the centers operations specifications (OpSpecs) to determine the approved location for maintaining required center and student records as well as the approved method(s) for keeping such records.
- 7) *Training Center Evaluators (TCE).* Ensure that each evaluator is observed annually by a qualified Inspector. The surveillance (which may be unannounced) will consist of the following:
- Observation of the conduct of an oral evaluation.
 - Observation of the flight simulator portion of a practical test, which should include the observation of the evaluator operating the simulator control panel during a certification practical test or check.
 - Observation of the aircraft portion of a practical test, if appropriate.
 - Compare the centers OpSpecs or individual TCE listing against the center's copy of each TCE's authorization for consistency, and to ensure each authorized TCE has received training appropriate to their authorization.

EBOOK VOLUME 12. SURVEILLANCE

8) *Training Programs, Curricula, and Courses.* Evaluate the courseware, syllabuses, equipment, and personnel to ensure that they continue to meet GACAR Part 142 regulatory requirements.

a) Ensure that the OpSpecs include all approved curricula/courses.

9) *Quality Assurance Programs.*

a) During surveillance of the training centers, the Inspector will be able to observe the effectiveness and adequacy of quality assurance measures.

b) Inspectors should consider the following when reviewing the center's proposed quality control measures:

1. Number of Inspections.

2. Effectiveness. The effectiveness of the training center's quality assurance audits may be measured by examining past quality assurance audits.

- Whether these audits identified any deficiencies or appear to be a routine fulfillment of a regulatory requirement; and
- Whether the training center's auditors appear to have an in depth knowledge of the center's objectives and regulatory requirements and responsibilities.

3. Documentation.

- Review the reports prepared by the training center's quality assurance department to determine if they are complete and thorough;
- Ensure that the reports reveal what was reviewed and inspected and have in-depth analyses into the deficiencies found and recommended corrective action(s); and
- Ensure the reports were reviewed by the training center's quality assurance department, how responsible supervisors or managers responded to the report, and the corrective action taken.

EBOOK VOLUME 12. SURVEILLANCE

- c) Determine if the program provides a realistic means to address problem areas.
- d) Determine if the program describes how training of auditors will be conducted.
- e) Determine whether all personnel understand their obligations under the quality assurance program.
- f) Does the center's top management fully support the program and provide meaningful feed back to the employees?

12.12.1.5. Inspection Results. Completion of this task can result in the following:

- Satisfactory inspection
- Communicate concerns/findings to the Director, Certification and Licensing Division
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

12.12.1.7. Future Activities. Based on inspection findings, determine if increased surveillance, additional enforcement, other job tasks, and/or additional coordination is required between the Inspector and the Office Manager.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 13. PART 145 INSPECTIONS

Section 1. Certificate Requirements Inspection for Part 145

12.13.1.1. GACA ACTIVITY REPORT (GAR).

A. GAR 3604 (AW)

12.13.1.3. OBJECTIVE. This section provides guidance for inspecting a repair station certificated in accordance with General Authority of Civil Regulation (GACAR) Part 145.

12.13.1.5. GENERAL. GACAR §§ 145.5, 145.87, 145.89 and 145.97 require that all certificated repair station have their certificate, operations specifications (OpSpecs), organizational chart and capability lists kept current and available for inspection and verification. When a GACAR Part 121 operator's aircraft with a Continuous Airworthiness Maintenance Program (CAMP) enters a certificated GACAR Part 145 repair station, GACAR §§ 121.659 and 145.83 establish that all GACAR Part 121 maintenance rules take precedence and the repair must be accomplished in accordance with that air operator's approved maintenance program.

12.13.1.7. REFERENCES, FORMS, AND JOB AIDS.

A. References.

- GACAR Part 43, 121 and 145
- Federal Aviation Administration (FAA), Advisory Circular (AC) 145-9 (as amended), Guide for Developing and Evaluating Repair Station and Quality Control Manuals.

B. Forms. GACA Activity Report (GAR).

C. Jobs Aids. None.

12.13.1.9. PROCEDURES.

A. Review Applicable Information. Before the inspection, the aviation safety inspector (Inspector) should carefully review:

EBOOK VOLUME 12. SURVEILLANCE

- 1) GACAR Part 43 and 145.
- 2) Repair Station Manual/Quality Control Manual (RSM/QCM).
- 3) Operation Specifications (OpSpecs).
- 4) Capability List (CL), as required.
- 5) General Authority of Civil Aviation (GACA) office file for the repair station.

B. Review Repair Station Certificate. Review the repair station's certificate and OpSpecs to verify that they are:

- 1) Available for inspection.
- 2) Identical to those on file in the GACA office file and properly signed.
- 3) Appropriate for the maintenance and alterations that are performed at the facility.
- 4) If the repair station uses a CL, verify that it is at the same revision level as the one on file at the GACA office file.

C. Determine Whether the Repair Station Holds a Limited Rating. If the repair station holds a limited rating, each article it is authorized to maintain and alter will be identified either on a CL or on its OpSpecs. Each item on the CL 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 CL, verify that it follows the procedures in its RSM/QCM for conducting self-evaluations and revising the list in accordance with GACAR § 145.97(c).

D. Review the Organizational Chart. Verify that the repair station's organizational chart is current and is the same as the GACA copy. Verify whether the chart matches the duties listed in the repair station manual.

E. Verify Authorization to Perform Line Maintenance. A repair station must be authorized by OpSpec D107 to perform line maintenance for operators conducting operations under GACAR Part 121 or 135. At location(s) listed in OpSpec D107, verify that the repair station has the

EBOOK VOLUME 12. SURVEILLANCE

facilities, equipment, trained personnel, and technical data to perform such line maintenance.

F. Verify Special Circumstance Work at Another Location. If the repair station is authorized to conduct special circumstance work at another location, verify they have approval through OpSpec D100.

G. Verify Data for Additional Fixed Locations. If the repair station is authorized to have additional fixed locations, the locations must be listed in OpSpec A101. Verify the data is correct.

H. Analyze Findings. Evaluate all deficiencies to determine if corrective actions will be required.

I. Conduct Debriefing. Brief the certificate holder on the inspection results. Discuss any deficiencies and possible corrective actions.

12.13.1.11. TASK OUTCOMES.

A. Complete the GAR.

B. Complete the Task. Completion of this task can result in one of the following:

- Satisfactory inspection
- Communicate concerns/findings to the Director, Airworthiness Division
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

C. Document Task. File all supporting paperwork in the GACA office file for the repair station.

12.13.1.13. FUTURE ACTIVITIES.

Based on inspection findings, determine if increased surveillance, additional enforcement, or other job tasks are warranted.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 13. PART 145 INSPECTIONS

Section 2. Station Record System Inspection for Part 145

12.13.2.1. GACA ACTIVITY REPORT (GAR).

A. 3605 (AW)

12.13.2.3. OBJECTIVE. This section provides guidance for inspecting the maintenance records system required by General Authority of Civil Aviation Regulations (GACAR) Part 43 and 145.

12.13.2.5. GENERAL. Repair station records include any records that document maintenance and alteration performed on an aircraft or part thereof. A repair station's maintenance records must be inspected periodically to verify that they meet the requirements of the repair station manual/quality control manual (RSM/QCM) procedures.

12.3.2.7. REFERENCES, FORMS, AND JOB AIDS.

A. References.

- GACAR Part 43 and 145
- Volume 3, Chapter 11, The Certification Process for Part 145
- Federal Aviation Administration (FAA) Advisory Circular (AC) 120 78 (as amended), Acceptance and Use of Electronic Signatures, Electronic Recordkeeping Systems, and Electronic Manuals.
- FAA AC 145 5 (as amended), Repair Station Internal Evaluation Programs.
- FAA AC 145 9 (as amended), Guide for Developing and Evaluating Repair Station and Quality Control Manuals.

B. Forms.

- GACA Activity Report (GAR)

EBOOK VOLUME 12. SURVEILLANCE

C. Job Aids. None.

12.3.2.9. PROCEDURES.

A. Review Applicable Information. Before the inspection, the aviation safety inspector (Inspector) should carefully review:

- 1) GACAR Part 43 and 145.
- 2) RSM/QCM for the description of the required records and the recordkeeping system used to obtain, store, and retrieve those records.
- 3) The repair station's General Authority of Civil Aviation (GACA) office file.

B. Review Required Records and Retention. The records must be in English and comply with GACAR Part 43, as follows:

- 1) *Work Orders.* All maintenance records/ work orders are required to be retained by the repair station for no less than 2 years.
- 2) *Approval for Return to Service (Maintenance Release).* The repair station must provide a copy of the maintenance release to the owner/operator. The RSM procedures should describe who would review the records for accuracy and completeness before approval for return to service.
- 3) *GACAR § 43.11.* Describes the content, form, and disposition of maintenance, preventive maintenance, and alteration records. The content must include a description of the maintenance performed, the date the maintenance was completed, and the name of the person performing the maintenance. It also must include the signature, certificate number, and type of certificate of the person approving the maintenance for return to service.
- 4) *GACAR § 43.13.* Describes the disposition of life-limited aircraft parts. Verify procedures that govern the temporary removal of parts from type-certificated products, establish controls for parts permanently removed from type-certificated products, and the transfer of life-limited parts are in place and adhered to.
- 5) *GACAR § 43.15.* Describes the content, form and disposition of maintenance records for

EBOOK VOLUME 12. SURVEILLANCE

inspections performed under GACAR Part 91,125, 133 and 135.239(a)(1) or § 135.245. Verify record entries are entered in the appropriate aircraft maintenance record reflecting the type inspection performed (100-hour, annual, progressive, Approved Aircraft Inspection Program (AAIP)) and the similarly worded approval for return to service statement.

6) *Major Repairs/Alterations.* The repair station should retain a record of all major repairs and alterations completed as part of any maintenance record retention system as required by the regulation.

- a) Major Repairs. The repair station may use the customer's work order or GACA Major Repair and Alteration Form to record a major repair made in accordance with GACA-approved data.
- b) Major Alterations. The repair station must use a GACA Major Repair and Alteration Form to record major alterations. Verify that the GACA Major Repair and Alteration Form is complete and routed in accordance with the requirements in GACAR Part 43, Appendix B.

C. Check Personnel Rosters. Ensure the history of the required personnel roster is retained to provide the Inspector with information concerning personnel authorizations added or removed.

D. Verify Records Availability. Records must be made available to the GACA. The Inspector should verify that the "records package" is organized for easy retrieval and that procedures describing the location of the records and the system used to retrieve those records are complied with. Inspectors must review procedures governing the storage and retrieval of records from remote storage sites for compliance.

E. Review Training Records. All training records must be retained for a period of 2 years. The training records must record both initial and recurrent training. However if the employee has been employed by the repair station for over the 2-year requirement, the record of the initial training may not be available for review. It is recommended that the Inspector encourage the repair station to retain a record of the employee's initial training.

F. Check Electronic Records. If an electronic recordkeeping system has been approved by the GACA and is being used by the repair station, the Inspector should review the RSM for relevant procedures and verify the following elements:

EBOOK VOLUME 12. SURVEILLANCE

1) *Procedures.*

a) Procedures making required records available to both the GACA personnel. If the computer hardware and software system is not compatible with the GACA, the organization must provide an employee or representative to assist. This individual must be familiar with the computer system and assist in accessing the necessary computerized information. This procedure and computer system must be capable of producing paper copies of the viewed information at the request of the GACA.

NOTE: The GACA must be able to review the records and information at their respective offices when necessary and on request. Persons or entities can fulfill this request in many ways (electronic copy, paper copy, etc.).

- b) Procedures for reviewing the computerized personal identification codes system to ensure that the system will not permit password duplication.
- c) Procedures for auditing the computer system every 60 days to ensure the integrity of the system. A record of the audit should be completed and retained on file as part of the operator's record retention requirements. This audit may be a computer program that automatically audits itself.
- d) Audit procedures to ensure the integrity of each computerized workstation. If the workstations are server-based and contain no inherent attributes that enable or disable access, there is no need for each workstation to be audited.
- e) Procedures describing how the operator will ensure that the computerized records are transmitted in accordance with the appropriate regulatory requirements to customers or to another operator. The records may be either electronic or paper copies.
- f) Procedures to ensure that records required to be transferred with an aircraft are in a format (either electronic or on paper) that is acceptable to the new owner/operator.
- g) Guidelines for authorized representatives of the owner/operator to use electronic signatures and to have access to the appropriate records.
- h) A description of the training procedure and requirements necessary to authorize access to the computer hardware and software system. (Recognizing that the details

EBOOK VOLUME 12. SURVEILLANCE

will vary with the different individuals who need access, the training description may simply be part of the position description. Its location should be referenced in the RSM/QCM.)

2) *Security.*

- a) The electronic system should protect confidential information.
- b) The system should ensure that the information is not altered in an unauthorized way.
- c) A corresponding policy and management structure should support the computer hardware and computer software that delivers the information.

G. Check Operator Procedures. If the repair station is performing maintenance for an operator or operator (GACAR Part 121, 125, 133 or 135), verify the repair station maintenance records reflect the requirements found in the operator or operator's manual. The forms and procedures may differ from those the repair station normally uses.

H. Verify Malfunction Defect Reporting. Verify whether the repair station has submitted reports of failures, malfunctions, or defects to the GACA within 96 hours of discovery and that those reports were submitted in accordance with RSM/QCM requirements.

I. Analyze Findings. Evaluate all deficiencies to determine if corrective actions will be required.

J. Conduct Debriefing. Brief the certificate holder on the inspection results. Discuss any deficiencies and possible corrective actions.

12.13.2.11. TASK OUTCOMES.

A. Complete the GAR.

B. Complete the Task. Completion of this task can result in one of the following:

- Satisfactory inspection
- Communicate concerns/findings to the Director, Airworthiness Division

EBOOK VOLUME 12. SURVEILLANCE

- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

C. Document Task. File all supporting paperwork in the GACA office file

12.13.2.13. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, or other job tasks are warranted.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 13. PART 145 INSPECTIONS

Section 3. Manual System Inspection for Part 145

12.13.3.1. GACA ACTIVITY REPORT (GAR).

A. 3660 (AW)

12.13.3.3. OBJECTIVE. This section provides guidance for inspecting a General Authority of Civil Aviation Regulation (GACAR) Part 145 repair station's manual system.

12.13.3.5. GENERAL. The repair station may have several manuals or documents that are part of its quality control, repair station, and training manual system. They may combine portions required by GACAR § 145.89 with portions required by GACAR §§ 145.67 and 145.91 into one section or chapter of the manual system.

12.13.3.7. REFERENCES, FORMS, AND JOB AIDS.

A. References.

- GACAR Part 1, 39, 43, and 145
- Volume 3, Chapter 11, The Certification Process for Part 145
- Federal Aviation Administration (FAA) Advisory Circular (AC) 120-78 (as amended), Acceptance and Use of Electronic Signatures, Electronic Recordkeeping Systems, and Electronic Manuals.
- FAA AC 145-9 (as amended), Guide for Developing and Evaluating Repair Station and Quality Control Manuals.
- FAA AC 145-10 (as amended), Repair Station Training Program.

B. Forms. GACA Activity Report (GAR).

C. Job Aids. None.

EBOOK VOLUME 12. SURVEILLANCE

12.13.3.9. PROCEDURES.

A. Review Applicable Information. Before the inspection, the aviation safety inspector (Inspector) should carefully review:

- Repair Station Manual/Quality Control Manual (RSM/QCM)
- The repair station training program and manual
- GACA office file

B. Inspect Repair Station RSM. Verify:

- 1) Revisions to the RSM are being made in accordance with the repair station's revision system.
- 2) The RSM identifies who is authorized to make and approve changes to the RSM.
- 3) Revisions are properly distributed and incorporated by sampling RSMs throughout the facility.
- 4) All copies of the RSM are at the same revision level as the General Authority of Civil Aviation (GACA) office copy.

NOTE: Per GACAR § 145.89, GACA is not required to review and accept revisions before implementation, provided the repair station follows the revision procedures in its manual. The repair station should have a procedure in its manual to recall revisions if the GACA finds a revision unacceptable.

- 5) The RSM is accessible for use by all repair station personnel, on all work shifts. If the manual system is maintained electronically, sufficient viewing terminals must be available and each copy on individual computers must be current.

NOTE: Verify the foreign repair station has provided the GACA with an English language version of its RSM.

C. Review the Quality Control System. Verify:

EBOOK VOLUME 12. SURVEILLANCE

- 1) The QCM is available to all repair station personnel.
- 2) All technical data referenced in the manual is current.
- 3) All forms listed in the manual are still current and the repair station is not using any forms in the quality system not listed in the manual.
- 4) All copies of the QCM are at the same revision level as the GACA office copy.

D. Review the Training Manual.

- 1) Repair stations vary drastically in size; therefore an Inspector can expect differences in repair station training programs. The training program must be appropriate to its organization and the work it performs. The training program itself may be documented in the RSM or it may be a separate document. An advantage to having the training program in a separate document is that it provides separation for the training program approval requirement from the non-approved RSM/QCM.
- 2) If the training program is a separate document, verify it is approved and current.
- 3) If the training program is incorporated in the RSM, verify that the section of the manual is an approved document and that it is current.

NOTE: The Inspector approves the training program. The curriculum, course outline, lesson plans, and instructors are not approved by the Inspector.

- 4) For additional guidance, refer to Section 10 of this chapter, Training Program Inspection for Part 145.

E. Check the Operator(s) Manuals.

- 1) Repair stations perform maintenance, preventive maintenance, or alterations for operators conducting operations under GACAR Part 91, 121, 125, 133 and 135. For GACAR Parts 121, 125 and 135 the work must be performed in accordance with the operator's Continuous Airworthiness Maintenance Program (CAMP) and/or the operator's maintenance manual, as applicable.
- 2) Verify that the repair station has been provided with the information necessary to ensure

EBOOK VOLUME 12. SURVEILLANCE

compliance with this requirement. This information must be defined on contractual documents from the operator by clearly stating the source of the data (manufacturer's or operator manual(s)) used to perform the requested maintenance along with any other requirements of its program or maintenance manual. If the repair station has applicable sections of operators' maintenance program(s) or manual(s), verify that they are controlled and current copies.

F. Review Electronic Manual(s). For electronic manual(s), the following concerns should be reviewed during the inspection:

1) *Security and Access.* Determine:

- Only authorized personnel may make changes to the manual
- Access is protected by passwords
- Employees have been trained to access the manual on the network (if applicable)
- All of the supervisors and inspectors have access to the manual

2) *Revisions.* Determine:

- The user knows that the manual has been revised and what content was changed
- Personnel verifies the currency of individual disks before use

G. Analyze Findings. Upon completion of the inspection, record all deficiencies; determine the appropriate corrective action(s).

H. Conduct Debriefing. Brief the repair station on the inspection results. Discuss any deficiencies and possible corrective actions.

12.13.3.11. TASK OUTCOMES.

A. Complete the GAR.

B. Complete the Task. Completion of this task can result in one of the following:

EBOOK VOLUME 12. SURVEILLANCE

- Satisfactory inspection
- Communicate concerns/findings to the Director, Airworthiness Division
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

C. Document Task. File all supporting paperwork in the GACA office file

12.13.3.13. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, or other job tasks are warranted.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 13. PART 145 INSPECTIONS

Section 4. Housing and Facilities Inspection for Part 145

12.13.4.1. GACA ACTIVITY REPORT (GAR).

A. 3657 (AW)

12.13.4.3. OBJECTIVE. This section provides guidance for inspecting the adequacy of a General Authority of Civil Aviation Regulation (GACAR) Part 145 repair station facilities.

12.13.4.5. GENERAL. The certificated repair station must provide the facilities to accommodate the equipment, materials, and personnel necessary to properly perform the maintenance, preventive maintenance, alterations of articles or the specialized services for which it is rated. When inspecting the repair station, determine which items apply based on the complexity of the facility and the level of ratings.

12.13.4.7. REFERENCES, FORMS, AND JOB AIDS.

A. References:

- GACAR Part 145
- Federal Aviation Administration (FAA), Advisory Circular (AC) 43-15 (as amended), Recommended Guidelines for Instrument Shops.
- FAA AC 145-6 (as amended), Repair Stations for Composite and Bonded Aircraft Structure.

B. Forms. GACA Activity Report (GAR).

C. Job Aids. None.

12.13.4.9. PROCEDURES.

A. Review Applicable Information. Before the inspection, the aviation safety inspector

EBOOK VOLUME 12. SURVEILLANCE

(Inspector) should carefully review:

- GACAR Part 145
- Repair Station Manual/Quality Control Manual (RSM/QCM)
- Operations specifications (OpSpecs), to include OpSpec A101, if applicable
- General Authority of Civil Aviation (GACA) office file

B. Verify Segregation and Protection of Parts. Verify that each workspace has areas for the proper segregation and protection of parts and subassemblies during all phases of maintenance, preventive maintenance, or alterations. Inspect for the following:

- 1) The differences between serviceable and unserviceable components, parts, and materials must be clearly distinguishable throughout each process. This may be accomplished with suitable racks, hoists, trays, stands, and/or other means of segregation for the storage and protection of all articles.
- 2) Environmentally hazardous or sensitive operations, such as avionics work, battery maintenance, painting, cleaning, welding, and machining, should be situated in such a manner that they do not adversely affect other maintenance or alteration of articles or activities.
- 3) If the facility deals in non-aircraft parts, materials, or maintenance activities outside the realm of the repair station, it should segregate the aircraft function from other functions to preclude unapproved parts or materials from being used on an aircraft.
- 4) Articles and materials stocked for installation must be segregated from those undergoing maintenance, preventive maintenance, or alteration.

C. Determine Adequacy of Environmental Conditions. Ventilation, lighting, and control of temperature, humidity, and other climatic conditions must be sufficient to ensure that personnel perform maintenance, preventive maintenance, or alterations to the required standards. In addition to reasonable heating, air conditioning and lighting requirements, verify the following:

- 1) Instrument shop environmental conditions are in accordance with the manufacturer's

EBOOK VOLUME 12. SURVEILLANCE

standards.

- 2) Composite lay-up and clean rooms are environmentally and operationally controlled in accordance with the Original Equipment Manufacturer (OEM) or other GACA approved repair process.
- 3) Storage areas include proper storage conditions for flammables, sealants, chemicals, tires, tooling, etc.
- 4) Lighting is adequate for the type of process being performed in each area.
- 5) While physically inspecting the repair station, verify that the facility diagram(s) and description in the repair station manual are accurate. This includes any facilities used for spray painting, avionics, engine or airframe repair, or any other work that would have special requirements. Pay close attention to specific information detailed in the manual, such as the type of heating, lighting, equipment location, electrical, and compressed air outlets.

D. Check Human Factors. Repair stations are responsible for creating a safe working environment that will prevent personnel injury and damage to customer's property. The housing and facilities should provide for adequate security and fire protection. The Inspector should review the repair station's safety procedures keeping in mind that poor housekeeping or improper maintenance of safety devices, such as eye wash stations and fire extinguishers, are good indicators of the repair station's corporate culture.

NOTE: This inspection focuses on the repair station following its safety policies and procedures. Safety and health rules, codes, and regulation are outside the Inspector's jurisdiction.

E. Inspect General Housekeeping. Inspect the repair station to determine that the general housekeeping will not contaminate component parts and subassemblies undergoing maintenance. All shops should be maintained in a clean and orderly manner.

F. Analyze Findings. Upon completion of the inspection, record all deficiencies; determine the appropriate corrective action(s).

G. Conduct Debriefing. Brief the repair station on the inspection results. Discuss any

EBOOK VOLUME 12. SURVEILLANCE

deficiencies and possible corrective actions.

12.13.4.11. TASK OUTCOMES.

A. Complete the GAR.

B. Complete the Task. Completion of this task can result in one of the following:

- Satisfactory inspection
- Communicate concerns/findings to the Director, Airworthiness Division
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

C. Document Task. File all supporting paperwork in the GACA office file.

12.13.4.13. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, or other job tasks are warranted.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 13. PART 145 INSPECTIONS

Section 5. Tools and Equipment Inspection for Part 145

12.13.5.1. GACA ACTIVITY REPORT (GAR).

A. 3658 (AW)

12.13.5.3. OBJECTIVE. This section provides guidance for inspecting a repair station's tools and equipment and system procedures to ensure compliance with the repair station manual/quality control manual (RSM/QCM) and the General Authority of Civil Aviation Regulations (GACAR) § 145.45.

12.13.5.5. GENERAL. The repair station is required to provide, control, and maintain the tools and equipment necessary to perform the maintenance, preventive maintenance, or alteration under its certificate and operations specifications (OpSpecs).

NOTE: Precision tools and test equipment used to make airworthiness determinations are herein referred to as measuring tools and equipment (MTE).

12.13.5.7. REFERENCES, FORMS, AND JOB AIDS.

A. References.

- GACAR Part 43 and 145
- Volume 3, Chapter 11, The Certification Process for Part 145
- Volume 4, Chapter 19, Section 5, Evaluate Avionics Test Equipment
- Volume 12, Chapter 15, Section 11, Avionics Test Equipment Inspection
- Federal Aviation Administration (FAA), Advisory Circular (AC) 43-15 (as amended), Recommended Guidelines for Instrument Shops.
- FAA AC 145-9 (as amended), Guide for Developing and Evaluating Repair Station and

EBOOK VOLUME 12. SURVEILLANCE

Quality Control Manuals.

- FAA AC 43-207 (as amended), Correlation, Operation, Design and Modification of Turbofan/Jet Engine Test Cells.

B. Forms. General Authority of Civil Aviation (GACA) Activity Report (GAR).

C. Job Aids. None.

12.13.5.9. PROCEDURES.

A. Review Applicable Information. Prior to an inspection, the aviation safety inspector (Inspector) should carefully review:

- 1) GACAR Part 43 and 145.
- 2) RSM/QCM.
- 3) Applicable Operations Specifications (OpSpecs).
- 4) GACA office file.

B. Review Calibration/Record. Review the part of the RSM/QCM describing the system, and procedures used for calibrating MTE.

1) *The Inspector will verify:*

- a) The repair station is calibrating MTE, in accordance with the intervals, the system, and procedures described in the RSM/QCM.
- b) All MTE are calibrated and traceable to a standard acceptable to the GACA, to include those recommended by other national authorities.

NOTE: GACAR Part 145 states that tools must be calibrated to a standard acceptable to the President.

2) *The Inspector should consider the following:*

EBOOK VOLUME 12. SURVEILLANCE

- a) Whether the repair station determines calibration status of new MTE before they are put into service.
- b) How and when MTE are recalled for calibration.
- c) Does the calibration and tracking system include employee-owned MTE?
- d) How the repair station establishes calibration intervals.
- e) Whether the repair station maintains a list of all calibrated equipment by name, model or part number, serial number, date of calibration, and next calibration due date.
- f) If calibration records are maintained for at least 2 years.
- g) If MTE are identified to prevent the inadvertent use of non-calibrated equipment in the maintenance process. The identification usually includes the serial number or other identification, date of last calibration, date calibration is due, and the name or initials of the person who performed the calibration.
- h) Whether MTE that are not used to make airworthiness determinations are identified.
- i) How the repair station performs in-house calibration of the repair station's MTE.

NOTE: The tool or test equipment used as a standard for performing calibrations cannot be used to perform maintenance after it is calibrated and before being used as an in-house calibration standard.

C. Verify Use of Manufacturers Requirements and Equivalency. Review the part of the RSM/QCM describing the system and procedures used for ensuring the equipment and tools used to maintain articles are those recommended by the article's manufacturer or the equivalent as accepted by the GACA.

- 1) Verify that the repair station is using the system and procedures in the RSM/QCM for ensuring the equipment and tools used to maintain articles are those recommended by the article's manufacturer or the equivalent as accepted by the GACA.

NOTE: The basis of equivalency is the requirement that the article meet the manufacturer's standards and specifications in all respects regarding tolerances, repeatability, and

EBOOK VOLUME 12. SURVEILLANCE

accuracy.

NOTE: This section is not intended to discuss industry standard tools and equipment (wrenches, multi-meters, sockets, etc.) that are manufactured to a recognized industry standard.

2) If the repair station manufactures test and measuring equipment to be used as an equivalent piece of equipment for one recommended by an article's manufacturer, verify that it meets the calibration standards recommended by the manufacturer of the article being measured or tested. This type of calibration would be expected to be traceable to a standard acceptable to the GACA.

D. Inspect Control, Maintenance, and Storage. Review the parts of the RSM/QCM describing the system and procedures for the control, maintenance, use, and storage of the MTE used to maintain articles.

1) Verify whether the:

- Repair station is following its system and procedures in the RSM/QCM for the control, maintenance, use, and storage of the MTE used to maintain articles
- Repair station has the MTE necessary to perform the maintenance, preventive maintenance, or alterations under its repair station certificate
- MTE are located on the premises and under the repair station's control when the work is being done

2) Also consider any of the following:

- Whether the repair station has the maintenance and service manuals for all MTE used to perform the maintenance, preventive maintenance, or alterations under its repair station certificate
 - Whether the repair station fulfills the MTE manufacturer's requirements for control, maintenance, use, and storage
- a) If the repair station does not own the equipment and/or it is not kept at the facility, determine the following:

EBOOK VOLUME 12. SURVEILLANCE

- o How the equipment is obtained (lease, rental, etc.)
- o How the repair station ensures the equipment is on the premises and under the repair station's control at the time the work is being performed
- o How the repair station ensures that the department responsible for calibrating leased MTE is identified

E. Inspect Test Cells. Review the RSM/QCM section describing the system(s) and procedure(s) necessary for correlation, operation, design, and modification of test cells. Verify:

- 1) The repair station is following the systems and procedures in the RSM/QCM for the control, maintenance, use, and storage of the MTE used to maintain articles.
- 2) The test cell conforms to the description in the RSM/QCM, to include:
 - An accurate description of the system(s) and procedure(s) to ensure test cell correlation, operation, design, and modification
 - A description of the system(s) design, operation, configuration, and construction of test cell and test hardware for operation and performance
- 3) The correlated test cell provides a means of ensuring that article(s) meet minimum test requirements.
- 4) The test cell instrumentation is calibrated to a standard acceptable to the GACA.
- 5) When repairs or structural modifications that significantly affect performance have been made to an existing test cell, that test cell correlation or re-correlation is accomplished.

F. Analyze Findings. Upon completion of the inspection, record all deficiencies and determine the appropriate corrective action(s).

G. Conduct Debriefing. Brief the repair station on the inspection results. Discuss any deficiencies and possible corrective actions.

12.13.5.11. TASK OUTCOMES.

EBOOK VOLUME 12. SURVEILLANCE

A. Complete the GAR.

B. Complete the Task. Completion of this task can result in one of the following:

- Satisfactory inspection
- Communicate concerns/findings to the Director, Airworthiness Division
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

C. Document Task. File all supporting paperwork in the certificate holder's office file.

12.13.5.13. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, or other job tasks are warranted.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 13. PART 145 INSPECTIONS

Section 6. Technical Data Inspection for Part 145

12.13.6.1. GACA ACTIVITY REPORT (GAR).

A. 3656 (AW)

12.13.6.3. OBJECTIVE. This section provides guidance for inspecting the technical data that a General Authority of Civil Aviation Regulation (GACAR) Part 145 repair station uses. The review will confirm its:

- Availability
- Currency
- Appropriateness for the work performed

12.13.6.5. GENERAL. The Repair Station Manual (RSM)/Quality Control Manual (QCM) must contain the procedures for ensuring that current technical data is available for the scope of maintenance the repair station is performing.

12.13.6.7. REFERENCES, FORMS, AND JOB AIDS.

A. References:

- GACAR Part 43 and 145
- Volume 3, Chapter 11, The Certification Process of Part 145

B. Forms. GACA Activity Report (GAR).

C. Job Aids. None.

12.13.6.9. PROCEDURES.

EBOOK VOLUME 12. SURVEILLANCE

A. Review Applicable Information. Before reviewing the technical data, the aviation safety inspector (Inspector) should carefully review the:

- RSM/QCM
- General Authority of Civil Aviation (GACAR) office file
- Operations specifications (OpSpecs)

B. Review Technical Data. The Inspector should review a representative sample of maintenance records or work orders by the repair station in order to verify the following items.

1) The technical data used by repair stations could include any of the following:

- a) *Program Deviation.* When the repair station is providing maintenance under the provisions of GACAR § 145.83, the repair station must follow the operator's program and applicable sections of its maintenance manual. Any deviation from that program must be authorized by the operator. This includes technical data used for repairs or alterations. The repair station should have documentation of how and when the repair station will notify the operator or commercial operator if it needs to deviate from the operator's program.
- b) *Manufacturer's Manuals/Data.* Manufacturer's manuals/data may be approved or may be acceptable data. If the repair or alteration is not covered in the manufacturer's manuals, then a determination must be made if the repair or alteration is major. If the repair station is providing maintenance for an operator, then the operator must make that determination. The repair station may have other data that has been approved, but the operator must authorize the repair station to use that data if the repair station is providing maintenance for the operator.
- c) *Inspection Programs.* GACAR § 91.449(e) requires owners/operators of certain large aircraft to select an inspection program under GACAR § 91.449(f). In turn, GACAR § 91.449(f) requires the owner/operator to use the program which it selected and identified in the maintenance records of the aircraft. Therefore, the maintenance provider should use either the inspection program that has been selected and identified by the owner/operator in the aircraft maintenance records or the most recent manufacturer's inspection program.

EBOOK VOLUME 12. SURVEILLANCE

d) *Program Availability.* It should also be noted that GACAR § 91.449(f) also requires each operator to include in its identification of the selected program the name and address of the person responsible for scheduling the inspections required by the program and make a copy of that program available to the person performing inspections on the aircraft and, upon request, to the GACA.

NOTE: To comply with a regulatory requirement to incorporate the current manufacturer's recommended inspection program, an operator need only properly adopt a manufacturer's program that is "current" as of the time the operator selects and identifies it in the aircraft maintenance records (GACAR § 91.449(f)). The program remains "current" unless the GACA mandates revisions to it in the form of an Airworthiness Directive (AD) or an amendment to the operating rules.

e) *Airworthiness Directive (AD).* When the repair station is providing maintenance based on an AD, the AD is approved data. However, if the repair station is providing maintenance using an AD with an alternative method of compliance (AMOC) within the AD, then the repair station should have something that documents that the AMOC has been approved under GACAR Part 39.

f) *Operator's Approved/Accepted Data.* Each operator will have a process to ensure they have approved data for all repairs or alterations. The operator has the responsibility to determine if the repair or alteration is major in order to comply with reporting and record keeping requirements applicable to major alterations and major repairs. The operator should provide the repair station with documentation that the repair or alteration has approved data. The repair station may have other data that has been approved, but the operator must authorize the repair station to use that data if the repair station is providing maintenance for the operator.

g) *Process Specifications.* The repair station may have a rating for specialized service. The operator should provide documentation authorizing the repair station to use its approved process specification on the operator product.

2) Verify that the technical data is appropriate for the maintenance or alterations to be performed.

3) Verify that the data is current, accurate, and complete.

EBOOK VOLUME 12. SURVEILLANCE

- a) The RSM procedure should describe how the revised technical data will be inserted into existing documents and how the appropriate individuals in the repair station will be notified about revisions.
 - b) If the repair stations use computer software for component testing, verify whether the revisions/updates are made and the current software is distributed.
- 4) Verify that the data is in the certificate holder's possession and easily accessible to all personnel. Ensure that the technical data is distributed throughout the company in accordance with the RSM.
- 5) For electronic technical data/manual(s), review the following concerns during the inspection.
- a) Security and Access. Determine whether:
 - Only authorized personnel are making changes to the manual
 - Unauthorized personnel are capable of making changes to the manual
 - Access to the manuals is protected by passwords
 - The employees have been trained to access the manual on the network
 - Unauthorized access is possible on the network or internet
 - All of the supervisors and inspectors have access to the manual
 - b) Revisions. Determine the following:
 - How the manuals are revised with their system (CD-ROM or Internet)
 - How the revisions are distributed
 - If the user knows that the manual has been revised and what content was changed
 - If personnel verify the currency of individual disks before use

EBOOK VOLUME 12. SURVEILLANCE

NOTE: For additional guidance see Section 2 of this chapter.

- 6) Verify that the controlled documents are distributed in accordance with the RSM/QCM to include distribution, accountability, and availability.
- 7) Verify that all technical data (e.g., Instructions for continued airworthiness (ICA), manufacturer's maintenance manuals, or type certificate holder's continuous airworthiness data) the repair station uses is retained in English. This includes all alteration records, logbook entries, return to service records, or any other maintenance or inspection record entries that demonstrate compliance with the requirements of GACAR § 43.11 or 43.15.
 - a) The GACA recognizes the national language of the country where the repair station is located may be different than English. The repair station may convert technical data (e.g., operator's ICA, manufacturer's maintenance manuals, or type certificate holder's continuous airworthiness data) into the national language. Internal documents (e.g., workcards, worksheets, and shop travelers) may be produced and maintained in the national language. Dual language (English/national language) internal documents are acceptable.
 - b) All technical data translated into the national language and used to meet the requirements of GACAR Part 43 should be current and accurate in translation.
- 8) Repair stations that are associated with or part of a production approval holder facility often use the manufacturer's drawings and data to perform maintenance. This data may not meet the requirements of GACAR § 43.15(a). Caution these repair stations that parts manufactured by the production side of the facility must be GACA-approved in accordance with GACAR Part 21.

C. Analyze Findings. Upon completion of the inspection, record all deficiencies and determine the appropriate corrective action(s).

D. Conduct Debriefing. Brief the repair station on the inspection results. Discuss any deficiencies and possible corrective actions.

12.13.6.11. TASK OUTCOMES.

A. Complete the GAR.

EBOOK VOLUME 12. SURVEILLANCE

B. Complete the Task. Completion of this task can result in one of the following:

- Satisfactory inspection
- Communicate concerns/findings to the Director, Airworthiness Division
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

C. Document Task. File all supporting paperwork in the GACA office file.

12.13.6.13. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, or other job tasks are warranted.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 13. PART 145 INSPECTIONS

Section 7. Quality Control System Inspection for Part 145

12.13.7.1. GACA ACTIVITY REPORT (GAR).

A. 3608 (AW)

12.13.7.3. OBJECTIVE. This section provides guidance for inspecting the quality control system of a General Authority of Civil Aviation Regulation (GACAR) Part 145 repair station to ensure compliance with the procedures in the repair station manual (RSM)/Quality Control Manual (QCM).

12.13.7.5. GENERAL.

A. The quality control system must be acceptable to the General Authority of Civil Aviation (GACA) so that it ensures the airworthiness of the products and articles on which the repair station (or any of its contractors) performs maintenance, preventive maintenance, or alterations.

B. The repair station must maintain an inspection system and describe the procedures in detail in its manual system. Items to be described include:

- Establishing the purchase of aviation articles
- How that material is inspected upon receipt
- Receiving customer's articles
- Progressing through each inspection step
- Ending in final inspection and approval for return to service

C. This system will include the controlling and documenting of the maintenance from the incoming inspection to final inspection (work order system). The quality control system also includes a description of the qualifying and surveillance requirements of a non-certificated person.

EBOOK VOLUME 12. SURVEILLANCE

NOTE: The phrase “non-certificated person” means a person or facility outside the repair station, and does not include a non-certificated individual working for the repair station.

12.13.7.7. REFERENCES, FORMS, AND JOB AIDS.

A. References:

- GACAR Part 43 and 145
- Volume 3, Chapter 11, The Certification Process for Part 145
- Federal Aviation Administration (FAA), Advisory Circular (AC), 145-5 (as amended), Repair Station Internal Evaluation Programs.
- FAA AC 145-9 (as amended), Guide for Developing and Evaluating Repair Station and Quality Control Manuals.

B. Forms. GACA Activity Report (GAR).

C. Job Aids. None.

12.13.7.9. PROCEDURES.

A. Review Applicable Information.

1) Before the inspection, the aviation safety inspector (Inspector) should carefully review the following:

- General Authority of Civil Aviation Regulations (GACAR) Part 43 and 145
- RSM/QCM with reference to GACAR § 145.91 requirements
- Operations specifications (OpSpecs)
- GACA office file

B. Verify the Contents of the Quality Control Manual (QCM). Verify that the QCM contains, but is not necessarily limited to, the requirements in GACAR § 145.91(c) as listed below:

EBOOK VOLUME 12. SURVEILLANCE

1) A description of the system and procedures for:

- Inspecting incoming raw materials for acceptable quality
- Performing preliminary inspections of all articles that are maintained
- Hidden damage inspection of articles that have been involved in an accident or other forms of abuse (i.e., water damage, etc.)
- Proficiency of inspection personnel (see Section 9 of this chapter, Personnel Inspection for GACAR Part 145)
- Current technical data for maintaining articles (see Section 6 of this chapter, Technical Data Inspection for GACAR Part 145)
- Qualifying and overseeing non-certificated persons who perform maintenance or alterations for the repair station
- Performing final inspection and return to service of maintained articles
- Calibrating measuring and test equipment
- Taking corrective action on deficiencies

2) References, where applicable, to the manufacturer's inspection standards for a particular article, including reference to any data specified by that manufacturer.

3) A sample of the inspection and maintenance forms and instructions for completing such forms or a reference to a separate forms manual.

4) Procedures for revising the QCM required under this section and notifying the GACA office of the revisions, including how often the GACA office will be notified of revisions.

C. Check Inspection System. Review a sample of the documents used during maintenance (travelers, work orders, inspection sheets, discrepancy sheets, etc.) as well as an inspection of the articles maintained. Confirm the repair station is performing and recording the following inspections in accordance with the RSM/QCM by verifying the following:

EBOOK VOLUME 12. SURVEILLANCE

1) *All Inspection.* Determine:

- Whether the article is identified throughout the maintenance cycle, including parts contracted out to non-certificated persons
- When, where, and to what standard the inspection is done
- Who can perform the inspection
- Where, how, and on what form the results of the inspection are recorded
- Disposition of the article after the inspection depending on each possible result

2) *Incoming Raw Materials Inspection.* Verify:

- Whether raw materials are identified in accordance with the definitions in the RSM/QCM
- The traceability of the materials back to the original lot
- The handling of suspected unapproved parts
- Whether shelf life and expiration dates are within limits

3) *Preliminary Inspection.* Check for compliance with Airworthiness Directives (AD) and, if required, service bulletins associated with the AD requirement.

4) *Hidden Damage Inspection.* Verify that this inspection includes a search for any secondary damage that could have resulted from an accident such as fire or heat damage.

5) *In-Process Inspection.*

- Determine if any additional maintenance, as described in a manufacturer's maintenance manual, is accomplished in accordance with RSM/QCM.
- Check for procedures for changing the steps in a process specification or accomplishing the tasks out of sequence.

EBOOK VOLUME 12. SURVEILLANCE

6) *Continuity of Inspection.* Verify that:

- If multiple shifts or consecutive inspectors are used, the procedures for continuing responsibility for maintenance in process are accomplished
- The status book, shift change log, or similar means used to track maintenance progress is used
- Responsibilities are completed even if inspectors are absent

7) *Performing Final Inspection.*

- a) The inspector who is signing off the final inspection and/or approval for return to service for the repair station is authorized on the roster of inspection personnel and is appropriately certificated under Part 66 and meets the requirements of GACAR §§ 145.59 and/or 145.61.
- b) The repair station inspects then certifies that each article upon which it has performed maintenance, preventive maintenance, or alterations is airworthy with respect to the work performed.
- c) When the final inspection is not satisfactory, corrective action is accomplished in accordance with appropriate data.

D. Review Contract Facility Audits. Verify that the repair station is qualifying and surveilling non-certificated persons who perform maintenance, preventive maintenance, or alterations for the repair station. The Inspector should review the contracts and surveillance records and verify whether:

- The non-certificated person has and uses a quality control system equivalent to that of the repair station for the work performed
- The repair station remains directly in charge of the work performed by the non-certificated person
- The contract the repair station has with the non-certificated person includes a requirement that the non-certificated person will allow the GACA to inspect and observe the work performed for the repair station

EBOOK VOLUME 12. SURVEILLANCE

- The repair station periodically performs and records audits of the non-certificated person to confirm the above-mentioned qualification
- The repair station tests and/or inspects and records that the non-certificated person performed the work satisfactorily and that the article was airworthy before approving it for return to service

E. Analyze Findings. Upon completion of the inspection, record all deficiencies; determine the appropriate corrective action(s).

F. Conduct Debriefing. Brief the repair station on the inspection results. Discuss any deficiencies and possible corrective actions.

12.13.7.11. TASK OUTCOMES.

A. Complete the GAR.

B. Complete the Task. Completion of this task can result in one of the following:

- Satisfactory inspection
- Communicate concerns/findings to the Director, Airworthiness Division
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

C. Document Task. File all supporting paperwork in the GACA office file.

12.13.7.13. FUTURE ACTIVITIES.

Based on inspection findings, determine if increased surveillance, additional enforcement, or other job tasks are warranted.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 13. PART 145 INSPECTIONS

Section 8. Parts and Material Program Inspection for Part 145

12.13.8.1. GACA ACTIVITY REPORT (GAR).

A. 3601 (AW)

12.13.8.3. OBJECTIVE. This section provides guidance for inspecting a General Authority of Civil Aviation Regulations (GACAR) Part 145 repair station's procedures for receiving, protecting, segregating, and identification of all parts and materials required to support the ratings held.

12.13.8.5. GENERAL. Repair stations must have procedures in their repair station manual/quality control manual (RSM/QCM) describing the receipt and documentation of all articles, standard parts, and raw materials. In addition, the repair station is required to inspect raw materials and standard parts for:

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

12.13.8.7. PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites.

- Knowledge of the regulatory requirements of GACAR Part 43 and 145
- Previous experience with certification or surveillance of GACAR Part 145 repair stations

EBOOK VOLUME 12. SURVEILLANCE

12.13.8.9. REFERENCES, FORMS, AND JOB AIDS.

A. References.

- GACAR Part 43 and 145
- Volume 3, Chapter 11, The Certification Process for Part 145
- FAA AC 145-9 (as amended), Guide For Developing and Evaluating Repair Station and Quality Control Manuals.

B. Forms. GACA Activity Report (GAR).

C. Job Aids. None.

12.13.8.11. PROCEDURES.

A. Review Applicable Information. Before inspecting, the aviation safety inspector (Inspector) should carefully review:

- 1) GACAR Part 43 and 145.
- 2) RSM/QCM.
- 3) Operations Specifications (OpSpecs).
- 4) General Authority of Civil Aviation (GACA) office file.

B. Review Information on Parts and Materials. Verify all parts and materials meet the following requirements:

- 1) *Storage and Protection.*
 - a) Verify if environmental requirements established by the original equipment manufacturer for the storage of parts and materials are being complied with (temperature, humidity, static, ultraviolet light exposure, etc.). Receiving/incoming inspection personnel must be familiar with these requirements.

EBOOK VOLUME 12. SURVEILLANCE

- b) Confirm whether parts room articles and those items in-process are identified to show:
- Basic part information (name/make/model/serial number/batch or lot, etc.)
 - Serviceability status of parts and materials in a manner that readily identifies serviceable parts and materials from unserviceable
 - Rejected parts, including questionable parts, awaiting disposition
- c) Check whether parts and materials are protected in storage and during transit, until installation, in a manner that will prevent damage, contamination, loss, or substitution. Sensitive parts and equipment (e.g., oxygen parts, O-rings, or electrostatic sensitive devices) must be properly stored, packaged, identified, and protected from contamination and damage. Hazardous, flammable, or volatile materials and aircraft parts (e.g., fire extinguisher squibs) must be stored in flameproof cabinets or facilities.
- d) Verify that all parts are appropriately identified and segregated.

2) *Life-Limited Parts.*

- a) All-life limited parts must have up-to-date component times listed on the historical records or appropriate tags, as required. In addition, all items received with shelf-life limits and/or specific storage requirements must be clearly marked, monitored, and disposed of in accordance with RSM/QCM procedures.
- b) The Inspector must determine if the repair station meets the requirements of GACAR § 43.13.

3) *Documentation/Traceability.*

- a) Parts/materials receiving procedures provide for traceability to an approved source. The repair station should retain traceability records for all incoming articles.

NOTE: It is common to receive certain raw materials/standard parts in lots, which must be broken down into smaller quantities (hardware, sheet stock, welding rod, coating powders, etc.). In these cases, traceability back to the original lots must be maintained. The repair

EBOOK VOLUME 12. SURVEILLANCE

station must have systems in place to ensure that only approved and traceable parts and materials are issued for maintenance performed.

b) The repair station maintains a record of inspections and tests used to verify the airworthiness of received components.

4) *Acceptable Quality.* Receiving personnel comply with RSM/QCM procedures to determine that incoming raw materials are of an acceptable quality. The repair station should conduct and document the training of receiving personnel in parts receiving/shipping, parts control, and detecting and reporting suspected unapproved parts (SUP).

NOTE: Inspectors should be alert to the activities of repair stations that dispose of scrap parts and materials and should review the RSM/QCM procedures to verify that scrap parts and materials are disposed of in a manner that does not allow their approval for return to service.

C. Check Procedures for SUP. Review with repair station personnel the procedures used to detect and report SUPs. These procedures should identify those persons responsible for the administration of the SUP program describe control of articles pending SUP determination and outline training requirements of receiving personnel.

D. Analyze Findings. Upon completion of the inspection, record all deficiencies; determine the appropriate corrective action(s).

E. Conduct Debriefing. Brief the repair station on the inspection results. Discuss any deficiencies and possible corrective actions.

12.13.8.13. TASK OUTCOMES.

A. Complete the GAR.

B. Complete the Task. Completion of this task can result in one of the following:

- Satisfactory inspection
- Communicate concerns/findings to the Director, Airworthiness Division

EBOOK VOLUME 12. SURVEILLANCE

- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

C. Document Task. File all supporting paperwork in the GACA office file.

12.13.8.15. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, or other job tasks are warranted.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 13. PART 145 INSPECTIONS

Section 9. Personnel Inspection for Part 145

12.13.9.1. GACA ACTIVITY REPORT (GAR).

A. 3659 (AW)

12.13.9.3. OBJECTIVE. This section provides guidance for inspecting the repair station to verify that the requirements of General Authority of Civil Aviation Regulations (GACAR) § 145.55 are met.

12.13.9.5. GENERAL. Each repair station must have the management personnel necessary for the scope and complexity of its organization. The regulation requires a repair station manager, supervisory personnel, inspection personnel, and certificated personnel to approve the articles it maintains/alters for return to service. It may be necessary for the repair station management structure to warrant additional supervisory personnel that are not required by regulation. In addition, a repair station is required to maintain a roster of managerial, supervisory, and inspection personnel. This list must include their qualifications and authority in the repair station. This roster may be maintained in paper or electronic format, and must be accessible for review and inspection by the General Authority of Civil Aviation (GACA).

12.13.9.7. REFERENCES, FORMS, AND JOB AIDS.

A. References.

- GACAR Part 43, 66 and 145
- Volume 3, Chapter 11, The Certification Process of Part 145
- Federal Aviation Administration (FAA), Advisory Circular (AC) 65-31(as amended), Training Qualification and Certification of Nondestructive Inspection (NDI) Personnel.
- FAA AC 145-9 (as amended), Guide for Developing and Evaluating Repair Station and Quality Control Manuals.

EBOOK VOLUME 12. SURVEILLANCE

- FAA AC 145-10 (as amended), Repair Station Training Program.

B. Forms. GACA Activity Report (GAR).

C. Job Aids. None.

12.13.9.9. PROCEDURES.

A. Review Applicable Information. Before inspecting, the aviation safety inspector (Inspector) should carefully review:

- 1) GACAR Part 43, 66 and 145.
- 2) Operations specifications (OpSpecs).
- 3) Repair Station Manual/Quality Control Manual (RSM/QCM).
- 4) GACA office file.

B. Review Personnel Requirements. Check the following:

- 1) *Certification.* Verify whether each person authorized to approve an article for return to service under the repair station certificate and OpSpecs is certificated under GACAR Part 66 (or equivalent foreign standards for repair stations located outside of the KSA) and understands, reads, and writes English.

NOTE: To satisfy the requirements of GACAR §§ 145.57(b)(1), 145.61, and 145.95(d), repair station personnel employed as repairmen with job functions including final inspection or approval for return to service of an aviation article, must have the appropriate rating on their repairman certificates. The repairman can only exercise the privileges of the repairman certificate for the rating(s) listed on his certificate.

NOTE: All managers, inspectors, and supervisors must be authorized, qualified, and listed on the repair station's required roster(s).

- 2) *Qualifications.* Verify that the repair station personnel performing functions governed by existing industry standards are trained and qualified to that standard (for welding, nondestructive testing, heat treatment, etc.). In some cases these industry standards may be

EBOOK VOLUME 12. SURVEILLANCE

identified on the repair stations' OpSpecs.

a) Verify that inspectors identified on the repair station's roster:

- Maintain proficiency in using the various types of inspection equipment and visual inspection aids appropriate for the article being inspected
- Are thoroughly familiar with the regulations and with the inspection methods, techniques, practices, aids, equipment, and tools used to determine the airworthiness of the article on which maintenance, preventive maintenance, or alterations is being performed
- Understand, read, and write English

NOTE: Inspectors with approval for return to service authority or final inspection must be able to read, write, understand, and speak the English language.

b) Verify that all supervisors:

- Are on the roster
- Are properly certificated for the supervisor position held
- Understand, read, and write English

NOTE: The GACA reserves the right to interview the repair station's supervisors, inspectors, and/or personnel responsible for final approval for return to service.

3) *Staffing.* Considering the size and scope of the repair station, verify that it has a sufficient number of employees with the training or knowledge and experience in the performance of maintenance, preventive maintenance, or alterations authorized by the repair station's ratings.

a) Verify if the certificated repair station has a sufficient number of supervisors, who are certificated under GACAR Part 66 (or foreign equivalent for foreign repair stations). The supervisors must also provide oversight to those individuals who are unfamiliar with the methods, techniques, practices, aids, equipment, and tools employed.

EBOOK VOLUME 12. SURVEILLANCE

b) Verify whether the repair station determines the abilities of its non-certificated employees who perform maintenance functions based on training, knowledge, experience, or practical tests.

4) *Roster/Summary.* Confirm that the repair station has the following:

- a) A current roster of management and supervisory personnel.
- b) A current roster of all inspection personnel.
- c) A current roster of personnel authorized to sign a maintenance release for approving a maintained or altered article for return to service.
- d) A current summary of the employment of each individual whose name is on the personnel rosters required by GACAR § 145.65. The summary must include:
 - Present title
 - Total years of experience and the type of maintenance work performed
 - Past relevant employment with names of employers and periods of employment.
 - Scope of present employment
 - The type of mechanic or repairman certificate held and the ratings on that certificate, if applicable

NOTE: Within 5 working days of a change, the rosters required by GACAR § 145.65 must reflect changes caused by termination, reassignment, change in duties or scope of assignment, or addition of personnel.

NOTE: It is appropriate for a repair station to develop a combination roster. The roster could include initials, signatures, stamp numbers, certificate numbers, or any other information used to designate the authority of inspection or supervisory personnel. It could also list persons who can sign/stamp off work documents or approve articles for return to service.

5) *Training.* Review the training records of inspectors and supervisors to verify they have

EBOOK VOLUME 12. SURVEILLANCE

the required training for their job function. The records should also show how the repair station qualified these individuals.

C. Analyze Findings. Upon completion of the inspection, record all deficiencies; determine the appropriate corrective action(s).

D. Conduct Debriefing. Brief the repair station on the inspection results. Discuss any deficiencies and possible corrective actions.

12.13.9.11. TASK OUTCOMES.

A. Complete the GAR.

B. Complete the Task. Completion of this task can result in one of the following:

- Satisfactory inspection
- Communicate concerns/findings to the Director, Airworthiness Division
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

C. Document Task. File all supporting paperwork in the GACA office file.

12.13.9.13. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, or other job tasks are warranted.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 13. PART 145 INSPECTIONS

Section 10. Training Program Inspection for Part 145

12.13.10.1. GACA ACTIVITY REPORT (GAR).

A. 3661 (AW)

12.13.10.3. OBJECTIVE. This section provides guidance for inspecting a General Authority of Civil Aviation Regulations (GACAR) Part 145 repair station training program.

12.13.10.5. GENERAL. A certificated repair station that performs maintenance, preventive maintenance, and alterations on Saudi Arabian registered aircraft, airframes, engines, propellers, appliances, and component parts must have a training program that is approved by the General Authority of Civil Aviation (GACA). Each repair station's training program will be based on its individual operation and needs, considering its size, location, ratings, employee experience, and skill levels.

12.13.10.7. TRAINING PROGRAMS.

A. The aviation safety inspector (Inspector) should keep in mind that a repair station located outside the Kingdom of Saudi Arabia (KSA) is not required to have any personnel who hold a certificate issued under GACAR Part 66. However, the standards of capability for individuals approving an article for return to service are otherwise the same. Also, the technical knowledge, skills, and abilities of those performing maintenance should be no different for mechanics, inspectors, supervisors, or managers, regardless of where the repair station is located. Consequently, the General Authority of Civil Aviation (GACA) expects these repair stations to have training programs that include the same basic elements as for repair stations located within the KSA, including a comprehensive needs assessment.

NOTE: Even though personnel are *not* required to be certificated outside the KSA, only an employee certificated under GACAR Part 66 or equivalent as determined by the President is authorized to approve an article for return to service.

B. When conducting the training needs assessment, the repair station should place special

EBOOK VOLUME 12. SURVEILLANCE

emphasis on an individual's ability to read, write, and understand the English language, as required by GACAR. All documents and records related to employee training must be in English.

C. Repair stations located outside the KSA that hold an approval under the US Federal Aviation Administration (FAA), the European Aviation Safety Agency (EASA) or other form of approval or certificate from a civil aviation authority (CAA), may already have a formal training program that satisfies the requirements of GACAR Part 145. In some cases, these programs might exceed KSA requirements. Such additional requirements will not interfere with a GACA approval of the training program as long as the program also meets all of the KSA requirements. Consequently, a repair station located outside the KSA does not have to maintain multiple programs; however, the training program must be GACA approved.

12.13.10.9. INSTRUCTORS. The repair station should set the basic standards for any instructor, whether a repair station employee, someone hired temporarily, or an instructor providing an outside training course/lesson. The repair station should have a procedure for evaluating and qualifying instructors.

12.13.10.11. REFERENCES, FORMS, AND JOB AIDS.

A. References:

- GACAR Part 66 and 145
- Federal Aviation Administration (FAA), Advisory Circular (AC) 145-9 (as amended), Guide for Developing and Evaluating Repair Station and Quality Control Manuals.
- FAA AC 145-10 (as amended), Repair Station Training Program.

B. Forms. GACA Activity Report (GAR).

C. Job Aids. None.

12.13.10.13. PROCEDURES.

A. Review Applicable Information. Before inspecting, the Inspector should carefully review:

- 1) GACAR Part 66 and 145.

EBOOK VOLUME 12. SURVEILLANCE

- 2) Operations Specifications (OpSpecs).
- 3) The repair station's approved training program.
- 4) GACA office file.

B. Review Approved Training Program. Verify:

- 1) The repair station is operating in accordance with a current training program approved by the GACA.
- 2) That both initial and recurrent training is conducted in accordance with the approved training program.
- 3) That each employee assigned to perform maintenance, preventive maintenance, alternations, and inspections has received training, which is documented in the repair station's training records, commensurate to the employee's job description.
- 4) The repair station training is documented and records are maintained in accordance with the Repair Station Manual/Quality Control Manual (RSM/QCM) procedures. These training records must be retained for a minimum of 2 years.
- 5) Any revisions to the repair station's approved training program are submitted in accordance with RSM procedures.

NOTE: The training program itself may be documented in the RSM or it may be a separate document. An advantage to having the training program in a separate document is that it provides separation for the training program approval requirement from the non-approved RSM/QCMs.

- 6) The repair station has procedures to provide and thoroughly document on-the-job training.
- 7) The repair station has not revised its training program without sending the revision to the Inspector for approval.
- 8) Who is responsible, by title, for the training program and the retention of the records.

EBOOK VOLUME 12. SURVEILLANCE

C. Determine Whether the Training Curriculum is Appropriate. The aviation safety inspector (Inspector) does not approve the curriculum for the repair station. However the Inspector should verify the curriculum is appropriate for the employee job and work assignment. If the Inspector discovers problems with personnel qualification in any shop area, then the Inspector should evaluate the curriculum for that shop area.

D. Check Instructor Qualifications. Verify if the repair station has a procedure for evaluating and qualifying instructors. The following should be considered in determining whether an instructor is appropriate:

- Appropriate background for subject area (such as formal training and/or experience)
- Teaching ability—the ability to impart information on the particular subject matter

E. Analyze Findings. Upon completion of the inspection, record all deficiencies and determine the appropriate corrective actions.

F. Conduct Debriefing. Brief the repair station on the inspection results. Discuss any deficiencies and possible corrective actions.

12.13.10.15. TASK OUTCOMES.

A. Complete the GAR.

B. Complete the Task. Completion of this task can result in one of the following:

- Satisfactory inspection
- Communicate concerns/findings to the Director, Airworthiness Division
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

C. Document Task. File all supporting paperwork in the GACA office file.

12.13.10.17. FUTURE ACTIVITIES.

Based on inspection findings, determine if increased

EBOOK VOLUME 12. SURVEILLANCE

surveillance, additional enforcement, or other job tasks are warranted.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 13. PART 145 INSPECTIONS

Section 11. Maintenance Process Inspection for Part 145

12.13.11.1. GACA ACTIVITY REPORT (GAR).

A. 3654 (AW)

12.13.11.3. OBJECTIVE. This section provides guidance for conducting a General Authority of Civil Aviation Regulations (GACAR) Part 145 detailed process/task inspection by analyzing the data, materials, and parts used in the aircraft maintenance and alterations process.

12.13.11.5. GENERAL. A detailed process/task inspection is a surveillance activity that will examine one or more specific tasks that are associated with the maintenance and alteration of an airframe, aircraft engine, propeller, appliances, and/or component parts.

12.13.11.7. REFERENCES, FORMS, AND JOB AIDS.

A. References.

- GACAR Part 43 and 145
- Volume 3, chapter 11, The Certification Process for Part 145
- Volume 12, Chapter 2, Section 5, Detailed Process/Task Inspection for GACAR Parts 121 and 125
- Federal Aviation Administration (FAA), Advisory Circular (AC) 145-9 (as amended), Guide for Developing and Evaluating Repair Station and Quality Control Manuals.

B. Forms. GACA Activity Report (GAR).

C. Job Aids. None.

12.13.11.9. PROCEDURES.

EBOOK VOLUME 12. SURVEILLANCE

A. Review Applicable Information. Before inspecting, the aviation safety inspector (Inspector) should carefully review:

- 1) GACAR Part 43 and 145.
- 2) Repair Station Manual/Quality Control Manual (RSM/QCM).
- 3) Operations specifications (OpSpecs).
- 4) General Authority of Civil Aviation (GACA) office file.

B. Identify the Process/Task To Be Inspected.

- 1) The Inspector should identify the process/task to be inspected, and identify those documents (travelers, task cards, work orders, maintenance/component maintenance manuals, etc.) that will verify the use of approved or accepted data, materials, tools, etc.
- 2) Inform the appropriate management personnel as to what particular process/task will be observed during the inspection. Inform the person in authority of the inspection criteria and the areas that will be verified.

NOTE: During this inspection, pay particular attention to any deviations from approved data or procedures.

C. Conduct the Process Review. The following steps serve as a guide to the Inspector in performing a process/task inspection. Certain steps may not be appropriate, depending on the complexity of the repair station. Inspect/review the following, as applicable:

- 1) *Procedures/Methods/Systems.* Determine:
 - Have been prepared for all processes
 - Reflect the technical data contained in appropriate maintenance manuals or other approved documents
 - Define and accept/reject criteria, required tools, test equipment, inspection equipment, details of method of inspection to be performed, and tolerance limits, as applicable

EBOOK VOLUME 12. SURVEILLANCE

- Denote and detail the function to be performed, sequence of operations, and inspection points to ensure proper handling of products from one station to another through all phases
- Have been approved, controlled, and documented after revisions are made
- Maintain traceability after completion of all operations

2) *Inspection Systems.* Determine:

- Inspection records (indicating the number of inspections made, conformance or nonconformance, and the action when the product is nonconforming) are maintained
- When required, re-inspection/retests are performed following rework
- Assemblies are inspected for conformity before closure
- All required inspections and tests have been satisfactorily accomplished before final acceptance of the completed products/parts
- Personnel performing required inspection items inspections for an operator are identified and authorized by the operator
- Inspection personnel are not exceeding their area of authority
- Internal audits are conducted to verify compliance with GACA approved or acceptable data, and appropriate procedures

3) *Technical Data.* Confirm:

- Personnel are provided with current technical data and changes
- Inapplicable, inappropriate, illegible, or obsolete data is removed from areas of potential use
- Nondestructive inspection (NDI) processes are reviewed for conformance with GACA-approved data

EBOOK VOLUME 12. SURVEILLANCE

- Process specification changes are submitted to the GACA for evaluation and approval
- Tags, forms, and other documents used are controlled

4) *Repairs and Alterations.* Verify:

- If the task involved is repair or alteration, that GACA-approved data was used to accomplish the task

NOTE: Any GACA-approved data procured by the repair station for use on GACAR Part 121, 125 and 135 aircraft must be in accordance with the operator's manual.

5) *Materials/Parts.* Determine:

- The materials, test records, and standards used in Non-Destructive Inspections (NDIs) are identified and controlled
- When required, special identification and controls for materials or parts are identified and are in place before the materials/parts are used
- When required, special handling and storage requirements for materials and parts are identified and used
- There is traceability of material or parts received from distributors and that the records of receiving inspection data are retained and list the name, part number, quantity, and inspection results

6) *Tools and Test Equipment.* Confirm:

- When required, special tools and test equipment are identified and used for an operation or process
- Calibration records are maintained for all tools and test equipment requiring calibration
- The facility's personnel are trained appropriately for their assignments

EBOOK VOLUME 12. SURVEILLANCE

7) *Additional Considerations.* Verify:

- Shift turnover procedures are in place and are being complied with
- Adequate numbers of personnel trained, qualified, and authorized to perform the specific task are available throughout the maintenance process
- As work is routed through the facility, it flows through the process with no interruptions due to personnel, facilities, or parts/materials availability that might affect airworthiness

D. Analyze Findings. Upon completion of the inspection, record all deficiencies and determine the appropriate corrective action(s).

E. Conduct Debriefing. Brief the repair station on the inspection results. Discuss any deficiencies and possible corrective action.

12.13.11.11. TASK OUTCOMES.

A. Complete the GAR.

B. Complete the Task. Completion of this task can result in one of the following:

- Satisfactory inspection
- Communicate concerns/findings to the Director, Airworthiness Division
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

C. Document Task. File all supporting paperwork in the GACA office file.

12.13.11.13. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, or other job tasks are warranted.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 13. PART 145 INSPECTIONS

Section 12. Authorization for Work Away From Its Fixed Location Inspection for Part 145

12.13.12.1. GACA ACTIVITY REPORT (GAR).

A. 3606 (AW)

12.13.12.3. OBJECTIVE. This section provides guidance for authorization and surveillance of General Authority of Civil Aviation Regulations (GACAR) Part 145 repair stations that perform aircraft maintenance away from their fixed location(s).

12.13.12.5. GENERAL. The following are the circumstances that allow a GACAR Part 145 repairman to do work away from the station:

A. Special Circumstances. When a “special circumstance” (as determined by the President) arises that allows work to be done away from the repair station on a temporary basis.

- 1) *Temporary Basis—Short Term* When a special circumstance arises such as a blown tire, radio, or navigation equipment changes, etc.
- 2) *Temporary Basis—Extended* When the repair or alteration requires the repair station to make repairs or alterations over an extended period, e.g., the aircraft is in for extended maintenance and an interior shop is requested to install a new interior at that location.

B. Recurring Basis. When it is necessary to perform such work on a recurring basis with operations specification (OpSpec) D100 authority.

NOTE: Working away from the repair station is not equivalent to a line maintenance authorization.

NOTE: The circumstances in subparagraphs A 1) and A 2) above require the repair station to submit a request to the aviation safety inspector (Inspector) for evaluation on a case by case basis, except for emergency short term work when the repair station has a procedure in its manual. In this case, the repair station only needs to notify the Inspector in accordance

EBOOK VOLUME 12. SURVEILLANCE

with the procedure.

12.13.12.7. REFERENCES, FORMS, AND JOB AIDS.

A. References:

- GACAR Part 145
- Volume 3, Chapter 11, The Certification Process for Part 145
- FAA Advisory Circular (AC) 145-9 (as amended), Guide for Developing and Evaluating Repair Station and Quality Control Manuals.
- OpSpec D100

B. Forms. GACA Activity Report (GAR).

C. Job Aids. None.

12.13.12.9. PROCEDURES.

A. Review Applicable Information. Before the inspection, the aviation safety inspector (Inspector) should carefully review:

- 1) GACAR Part 145.
- 2) The repair station manual/quality control manual (RSM/QCM) procedures on work away from the station.
- 3) OpSpec D100, if authorized.

B. Inspect a Repair Station Performing Work Away From the Fixed Location Under Special Circumstances.

1) Temporary Basis—Short Term

- a) Review the repair station procedures to verify that procedures are in place to:

EBOOK VOLUME 12. SURVEILLANCE

1. Control equipment, tools, required forms, etc.
2. Ensure qualified personnel for the required work.
3. Conduct emergency work away from the station. The procedure should contain an explanation of emergency work away from station as it relates to the repair station ratings. The procedures should detail how the Inspector is notified; if approval is required, they must be notified before dispatching the work crew.
 - b) The repair station must be able to provide written documentation that reflects the operator's method for the acceptance of all repair station programs, and the repair station's standard operating procedures (SOP) to ensure all maintenance is performed in accordance with the operator's Continuous Airworthiness Maintenance Program (CAMP). The operator must be informed of all contracted out work and if the maintenance provider must be inspected by the operator's Continuing Analysis and Surveillance System (CASS) auditors and all findings corrected before work is performed.

NOTE: It may not be necessary for the Inspector to approve each short term temporary situation; however, all situations will require the Inspector to be notified.

2) *Temporary Basis—Extended*

- a) Contracted maintenance that is authorized by the General Authority of Civil Aviation (GACA) may require several months to complete; this type of operation does not constitute the establishment of another repair station because it is temporary in nature.
- b) The repair station requesting to perform maintenance away from its fixed location for extended periods of time must evaluate the housing and facilities where the maintenance is to be performed to ensure the location meets the intent of GACAR Part 145.
- c) If additional time is needed, the repair station must submit another request updating the original information and providing any new details on the contracted maintenance.
- d) Review the repair station procedures to verify that the procedures will:

EBOOK VOLUME 12. SURVEILLANCE

1. Control equipment, tools, required forms, etc.
2. Ensure qualified personnel for the required project.
3. Provide the Principal Inspector (PI) with a plan on how and where the project will be performed, to include:
 - Controlling of parts
 - Tools
 - Personnel
 - Required inspectors
 - Length of time the project will take
 - Title of the person in charge of the project

NOTE: The Inspector must approve extended temporary projects before the crews are sent and must have a start date and an estimated completion date. The Inspector should only approve this request after ensuring the repair station will be able to control the project as if it were being completed at the home station.

C. Inspect a Repair Station Doing Work Away From the Fixed Location on a Recurring Basis.

- 1) Verify that the procedure for performing work away from the station on a continuing basis is clearly defined in the RSM/QCM. OpSpec D100 must reference the section and chapter where these procedures are located in the RSM/QCM.
- 2) Review all work packages completed away from station to confirm the work was completed per the procedures in the RSM/QCM.

NOTE: GACAR Part 145 does not allow continuous, uninterrupted maintenance or alteration operations to be performed at another location unless the location has been authorized as an additional fixed location with OpSpec A101.

EBOOK VOLUME 12. SURVEILLANCE

a) Verify that the repair station furnished its own tools and equipment.

NOTE: The repair station can have a lease agreement for tools and equipment if the procedures are contained in the RSM.

b) Verify that after the contracted maintenance is completed, the repair station transported its tools, equipment, and personnel back to its fixed location.

c) Verify that the repair station maintained a permanent fixed location even if the majority of its work is done at another facility.

3) Verify the RSM contains procedures for the following:

- Transporting tools and equipment to and from the work site without damage
- Ensuring that only qualified personnel are assigned to perform, supervise, and inspect the work completed
- Ensuring that all operator maintenance programs are followed

4) Verify the repair station is following its quality control system, and confirm that:

- All forms are properly completed per the quality control system
- The repair station follows their calibration system for calibrated tools
- All parts are stored and protected as required in the quality control system

5) Verify that the repair station only uses approved data.

D. Analyze Findings. Upon completion of the inspection, record all deficiencies; determine the appropriate corrective action(s).

E. Conduct Debriefing. Brief the repair station on the inspection results. Discuss any deficiencies and possible corrective actions.

12.13.12.11. TASK OUTCOMES.

EBOOK VOLUME 12. SURVEILLANCE

A. Complete the GAR.

B. Complete the Task. Completion of this task can result in one of the following:

- Satisfactory inspection
- Communicate concerns/findings to the Director, Airworthiness Division
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

C. Document Task. File all supporting paperwork in the GACA office file.

12.13.12.13. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, or other job tasks are warranted.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 13. PART 145 INSPECTIONS

Section 13. Contract Maintenance Program Inspection for Part 145

12.13.13.1. GACA ACTIVITY REPORT (GAR).

A. 3663 (AW) (Certificated Contract Repair Station)

B. 3607 (AW) (Non-certificated Contract Maintenance)

12.13.13.3. OBJECTIVE. This section provides guidance for surveillance and inspection of a General Authority of Civil Aviation Regulations (GACAR) Part 145 repair station manual/quality control manual (RSM/QCM) procedures for contracting maintenance functions and for the inspection of non-certificated outsource maintenance functions.

12.13.13.5. GENERAL. A repair station must have the material, equipment, and technical data necessary to perform the functions appropriate to its rating. However, it need not have the tools and equipment for functions it is authorized to contract out per its General Authority of Civil Aviation (GACA) approved list of maintenance functions. The repair station must request approval before it can contract a maintenance function to a non-certificated provider. If the GACA approves the contracted maintenance function, the repair station can determine who will perform the maintenance.

12.13.13.7. REFERENCES, FORMS, AND JOB AIDS.

A. References:

- GACAR Part 43 and 145
- Volume 3, Chapter 11, The Certification Process for Part 145
- Volume 4, Chapter 5, Section 1, Evaluate Outsource Maintenance Arrangement for Part 121
- Federal Aviation Administration (FAA), Advisory Circular (AC) 145-9 (as amended), Guide for Developing and Evaluating Repair Station and Quality Control Manuals.

EBOOK VOLUME 12. SURVEILLANCE

B. Forms. GACA Activity Report (GAR).

C. Job Aids. None.

12.13.13.9. PROCEDURES.

A. Review Applicable Information. Before inspecting, the aviation safety inspector (Inspector) should carefully review the following:

- 1) GACAR Part 43 and 145.
- 2) Operations Specifications (OpSpecs).
- 3) GACA office files.

B. Review the RSM/QCM. Review the RSM/QCM procedures for maintaining and revising the contract maintenance function information required by GACAR § 145.99. This information is required for contracting to both certificated and non-certificated facilities. The information required includes the approved maintenance functions to be contracted to non-certificated facilities and the name of each certificated and non-certificated outside facility to be in a format acceptable to the GACA.

NOTE: The GACA only approves the maintenance functions contracted to a non-certificated facility that is within the scope of the repair station's ratings.

C. Review the Maintenance Functions Facilities List. Review a representative sample of maintenance records to verify the repair station is only contracting to the facilities identified on the repair station's contract maintenance list.

D. Check Records for Certificated Facility. If the repair station contracts a maintenance function to a certificated facility, verify whether:

- 1) The list of maintenance functions contracted to each outside facility is current.
- 2) The list of names of each outside facility to whom the repair station contracts maintenance functions and the type of certificate and ratings held by each facility is current.
- 3) The items received from a certificated facility are properly processed in accordance with

EBOOK VOLUME 12. SURVEILLANCE

the repair station's receiving procedures.

E. Review Records for a Non-Certificated Facility. If the repair station contracts a maintenance function to a non-certificated facility, verify:

- 1) Maintenance functions requiring approval are those items for which a repair station is rated to maintain but chooses to outsource, as referenced in GACAR § 145.79(a), to a non-certificated maintenance provider.
- 2) The repair station ensures that all non-certificated persons performing contract maintenance functions follow a quality control system equivalent to the system followed by the repair station.
- 3) The repair station verified through testing and/or inspection all work performed by non-certificated persons is satisfactory and airworthy in accordance with the RSM/QCM.
- 4) The repair station approves for return to service articles that have been maintained by non-certificated contract maintenance providers in accordance with the RSM/QCM.
- 5) The certificated repair station remains directly in charge of the work performed by the non-certificated facility.
- 6) The repair station is qualifying the non-certificated facility in accordance with the RSM/QCM.
- 7) The repair station has provisions that will allow the GACA to inspect and observe the non-certificated facility's work on that article.
- 8) The inspectors have the appropriate technical data to determine airworthiness.
- 9) The inspectors are properly trained and qualified to determine airworthiness.

NOTE: The repair station rules already prohibit a repair station from maintaining any article for which it is not rated. Outsourcing these maintenance functions to a certificated repair station will not require additional approval.

F. Review the Repair Station's Quality Control System. For certificated and non-certificated contractors, the aviation safety inspector (Inspector) should consider:

EBOOK VOLUME 12. SURVEILLANCE

- 1) The procedures the repair station uses to obtain approval for the maintenance function.
- 2) The repair station's procedures to qualify the contractor.
- 3) The repair station's procedures for accomplishing surveillance on the contractor if it is a non-certificated repair station.
- 4) The procedures to properly maintain the contractor list.
- 5) The technical training on contracted functions for the repair station's receiving inspection personnel.
- 6) Whether the repair station's procedures for receiving inspections provide enough technical detail to determine the airworthiness of an article.
- 7) The currency of the list of maintenance functions for which the repair station has the housing, facilities, equipment, and materials "in-house", but may need to contract to another facility because of workload or emergency situations.
- 8) Whether the method by which a maintenance function is added to the GACA-approved list on an emergency basis is in accordance with the repair station's RSM/QCM.
- 9) Whether the repair station auditors that inspect contract maintenance sources are trained.

NOTE: It is not enough for the contracting repair station to give its QCM to the non-certificated contractor and assume the proper procedures will be followed. The certificated repair station must provide adequate surveillance to ensure its quality control procedures are followed.

NOTE: Contracting out maintenance functions should not be used to replace the need for adequately staffed and trained maintenance personnel. Inspectors should pay careful attention to repair stations that constantly revise the maintenance function list on an emergency basis to complete work in a timely manner. Inspectors should verify that repair stations have the necessary trained personnel for the scope and complexity of the ratings they hold and the work they undertake.

G. Verify Completion of Quarterly Utilization Report (QUR). Verify the repair station is

EBOOK VOLUME 12. SURVEILLANCE

completing the required QUR.

H. Analyze Findings. Upon completion of the inspection, record all deficiencies and determine the appropriate corrective action(s).

I. Conduct Debriefing. Brief the repair station on the inspection results. Discuss any deficiencies and possible corrective actions.

12.13.13.11. TASK OUTCOMES.

A. Complete the GAR.

B. Complete the Task. Completion of this task can result in one of the following:

- Satisfactory inspection
- Communicate concerns/findings to the Director, Airworthiness Division
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

C. Document Task. File all supporting paperwork in the GACA office file.

12.13.13.13. FUTURE ACTIVITIES.

Based on inspection findings, determine if increased surveillance, additional enforcement, or other job tasks are warranted.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 13. PART 145 INSPECTIONS

Section 14. Maintenance/Alteration Requirements Inspection for Part 145

12.13.14.1. GACA ACTIVITY REPORT (GAR).

A. 3618 (AW)

12.13.14.3. OBJECTIVE. This section provides guidance for inspecting the repair station's compliance with General Authority of Civil Aviation Regulations (GACAR) § 145.83, regarding maintenance, preventive maintenance, and alterations performed for operators under GACAR Part 121, 125, and 135.

12.13.14.5. GENERAL. The Repair Station Manual/Quality Control Manual (RSM/QCM) must describe the procedures to ensure that maintenance is performed in accordance with the operator's maintenance and inspection programs (e.g., Continuous Airworthiness Maintenance Program (CAMP) for a Part 121 operator).

A. Each repair station providing maintenance, preventive maintenance, and alterations for operators must follow the operator's maintenance and inspection programs. This requirement will vary, depending on the scope of maintenance contracted. A repair station that provides maintenance on the complete aircraft during heavy checks would have to address more of the operator's requirements than a repair station that only provides maintenance for component parts. Each repair station must have a clear understanding of those requirements.

B. For example, a repair station may have been contracted to overhaul an engine gearbox. Operator "A" may request the repair station to use the manufacturer's maintenance manual; but operator "B" may have additional maintenance requirements the repair station must follow. Operator "A" may request the repair station to complete all Airworthiness Directives (ADs); but operator "B" may have an alternative method of compliance (AMOC) to the AD that must be followed. Operator "B" must then provide the additional maintenance information to the repair station. Operator "C" not only has an AMOC for the gearbox AD but the gearbox is listed as a Required Inspection Item (RII). Now operator "C" must provide the additional maintenance information and it must train, qualify, and authorize the repair station inspection personnel on the operator's RII procedures.

EBOOK VOLUME 12. SURVEILLANCE

C. Each repair station must make sure that it understands all of an operator's requirements before providing maintenance on any operator product. The procedure for contracting work must be in the operator's manual. A purchase order from the operator does not relieve the contractor (repair station) from verifying that the data referenced on the purchase order is current and correct. Each operator is required by regulation to ensure that any person performing maintenance, preventive maintenance, or alterations does so in accordance with that operator's manual. The appropriate parts (and the changes and additions thereto) of the operator's manual must be provided to the contracted person. If the repair station does not have the appropriate parts of the operator's manual, it may not be able to determine whether it is complying with GACAR § 145.83(a).

12.13.14.7. REFERENCES, FORMS, AND JOB AIDS.

A. References:

- GACAR Part 43, 121, 125 and 145
- Volume 3, Chapter 11, The Certification Process for Part 145
- Volume 4, Chapter 5, Section 1, Evaluate Outsource Maintenance Arrangement for Part 121
- Operations Specifications (OpSpecs) A101 and D107

B. Forms. GACA Activity Report (GAR).

C. Job Aids. None.

12.13.14.9. PROCEDURES.

A. Review Applicable Information. Before starting the inspection, the aviation safety inspector (Inspector) should review the following:

- 1) GACAR Part 43 and 145.
- 2) The RSM/QCM.
- 3) OpSpecs A101 and D107 (if applicable).

EBOOK VOLUME 12. SURVEILLANCE

- 4) Operator's approved programs.

NOTE: The repair station may be performing maintenance for multiple operators and aircraft types. The Inspector should be aware of the variations in each of the operator's approved programs to more effectively plan and schedule surveillance.

NOTE: Any maintenance performed under GACAR § 145.83, whether by the repair station or any facility listed on the operator's contract maintenance list, is required to be performed in accordance with the operator's approved procedures. This requirement applies to any and all levels of subcontracted maintenance.

B. Review the Operator/Repair Station Contractual Agreements. Confirm that the repair station has been provided with the necessary information to verify compliance with the operator's approved program and maintenance manual.

NOTE: This information may be identified on the purchase order or other contractual documents from the operator. The documents must clearly state how the repair station will perform the requested maintenance along with any other requirements of its program or maintenance manual. If the repair station has applicable sections of an operator's maintenance program(s) or manual(s), verify that they are controlled and current for maintenance to be performed.

- 1) Verify the repair station has procedures for:

- a) Performing routine and non-routine maintenance, preventive maintenance, and alterations.

NOTE: The operator may have special maintenance requirements that the repair station is obligated to follow when performing maintenance under GACAR § 145.83.

- b) Meeting the operator requirements for periodic inspection and calibration of precision tools, measuring devices, and test equipment.
 - c) Preventing an inspector's decision regarding any required inspection from being countermanded. Only supervisory personnel of the inspection unit or an administrative person with overall responsibility for both the required inspection and other maintenance and alteration functions can override an inspector's decision. This

EBOOK VOLUME 12. SURVEILLANCE

override can only come from the operator.

- d) Ensuring that required inspections, maintenance, and alterations which are not completed because of a work interruption are properly completed before the aircraft is returned to service.
- e) Completing the work forms, job cards, and detailed procedures for performing inspections and other maintenance.
- f) Following the operator's system for recordkeeping and retention or the repair station system if so authorized.
- g) Meeting the training requirements of the operator.

2) In addition, if Required Inspection Items (RII) are required, verify:

- a) Whether the repair station has been provided with a list of designated inspection items.
- b) How the repair station will perform required inspections.
- c) How the operator will designate and authorize the repair station personnel performing required inspections by name and occupational title.
- d) If the repair station has procedures, standards, and limits necessary for required inspections, including identifying RII within work forms or job cards, if required.

NOTE: The repair station may use all or some of its own procedures for the above items if authorized by the operator.

C. Review Operator Requirements. Review a representative sample of maintenance records and or work orders/purchase orders by the repair station. Verify if the repair station is following the operator's approved program, which may include, but is not limited to:

- Requirements for airworthiness release
- Continuity of inspection program

EBOOK VOLUME 12. SURVEILLANCE

- Service difficulty reporting (SDR) requirements
- Continuing Analysis and Surveillance Program
- RII requirements (i.e., authorizations, training)
- Duty time limitations
- Maintenance recording requirements
- Any additional personnel training the operator may require
- Continuity of inspections
- Approved data
- Deviations

D. Line Maintenance. If the repair station performs line maintenance for operators, verify that:

- 1) The repair station's OpSpec D107 includes the types of maintenance authorized; it should list the types of aircraft by make and model for each operator with which it has a contract.
- 2) The repair station has a contract for each operator listed on the OpSpecs. The type of line maintenance must also be listed on the OpSpecs.
- 3) The repair station is only providing maintenance at the location on its OpSpecs.
- 4) The repair station performed the line maintenance in accordance with the operator's manual and approved program.
- 5) The repair station has the necessary equipment, trained personnel, and technical data to perform the line maintenance.

NOTE: The authorization to perform line station maintenance for an operator is not a rating. A certificated repair station must have established housing and facilities. However, only the requirement to provide suitable housing to enclose the largest type and model aircraft

EBOOK VOLUME 12. SURVEILLANCE

for airframe-rated repair stations has been waived by GACAR § 145.83(c).

E. Analyze Findings. Upon completion of the inspection, record all deficiencies; determine the appropriate corrective action(s).

F. Conduct Debriefing. Brief the repair station on the inspection results. Discuss any deficiencies and possible corrective actions.

12.13.14.11. TASK OUTCOMES.

A. Complete the GAR.

B. Complete the Task. Completion of this task can result in one of the following:

- Satisfactory inspection
- Communicate concerns/findings to the Director, Airworthiness Division
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

C. Document Task. File all supporting paperwork in the GACA office file.

12.13.14.13. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, or other job tasks are warranted.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 13. PART 145 INSPECTIONS

Section 15. In-Depth Inspection for Part 145

12.13.15.1. GACA ACTIVITY REPORT (GAR).

A. 3614 (AW)

12.13.15.3. OBJECTIVE. This section provides guidance and directions for completing an in-depth inspection of a General Authority of Civil Aviation Regulations (GACAR) Part 145 repair station. The repair station may be located either inside or outside of the Kingdom of Saudi Arabia (KSA).

12.13.15.5. GENERAL.

A. The scope of this inspection includes a comprehensive, in-depth review of all areas of a repair station. This inspection is more in-depth than an inspection of a specific subject e.g. manual system, technical data; therefore it will take more time than other specific area inspections to complete. The in-depth inspection is designed to be versatile. It may be utilized for annual work program requirements, a previous surveillance effort, allegations of improper maintenance, or component failure trends. The in-depth inspection is designed to aid the Inspector in determining the compliance health of a repair station. This category of inspection has been designed for repair stations that provide maintenance support under the provisions of a GACAR Part 121 operator's operations specification (OpSpec) D91. However this inspection may be used for any repair station.

B. Team Composition. Due to the size and scope of this task, this type of inspection is normally accomplished by a team of General Authority of Civil Aviation (GACA) aviation safety inspectors (Inspectors) (Airworthiness) led by a team leader. The size and complexity of the repair station must be considered when determining the number of Inspectors.

C. Inspection Plan. Prior to the inspection, the team leader should brief the rest of the team on the scope of the inspection and any specific expectations of GACA management. This section should be used as an inspection plan. The team leader and Inspectors should familiarize themselves with this handbook section.

EBOOK VOLUME 12. SURVEILLANCE

12.13.15.7. INSPECTIONS PARTS.

A. Main Base Location. This inspection should focus on the main base location, as this is where the bulk of the repairs are accomplished.

B. Repair Stations Doing Work Away From a Fixed Location. It is recommended that the same team that conducts a main base inspection should conduct the inspection at the work away locations.

C. Airmen Certification. Technical supervisory personnel in propeller or instrument repair stations require repairman certification. Technical supervisory personnel in all other stations may be certificated as airframe, powerplant or avionics mechanics, or repairmen. All personnel with return to service authority must be certificated.

D. Parts Inspection Procedures. All incoming parts must be inspected by the procedures in the certificate holder's manual. In addition, the procedures must ensure traceability of foreign parts. All repair stations must have a procedure for tracking life limited parts as required by GACAR § 43.13.

E. Sub Shops Located within the Repair Station. Often many repair station have several small shops located with-in the repair station. Such as: hydraulic, avionics, sheet metal, Nondestructive Testing (NDT), composite, etc. The team leader should provide a list of all shops located with the repair station and assign inspectors to each shop. The team leader should contact the Inspector for this and other additional information.

F. Elements of a Well-Designed Maintenance Organization. Use Figure 12.13.15.1 as guidance to ensure the repair station has all of the elements of a well-designed repair station.

Figure 12.13.15.1. Elements of a Well-Designed Maintenance Organization

EBOOK VOLUME 12. SURVEILLANCE

Volume 12, Chapter 13, Section 1 Certificate Requirements Inspection for Part 145 (GAR 3601)	Volume 12, Chapter 13, Section 2 Station Record System Inspection for Part 145 (GAR 3605)
Volume 12, Chapter 13, Section 3 Manual System Inspection for Part 145 (GAR 3660)	Volume 12, Chapter 13, Section 4 Housing and Facilities Inspection for Part 145 (GAR 3657)
Volume 12, Chapter 13, Section 5 Tools and Equipment Inspection for Part 145 (GAR 3658)	Volume 12, Chapter 13, Section 6 Technical Data Inspection for Part 145 (GAR 3656)
Volume 12, Chapter 13, Section 7 Quality Control System Inspection for Part 145 (GAR 3608)	Volume 12, Chapter 13, Section 8 Parts and Material Program Inspection for Part 145 (GAR 3601)
Volume 12, Chapter 13, Section 9 Personnel Inspection for Part 145 (GAR 3659)	Volume 12, Chapter 13, Section 10 Training Program Inspection for Part 145 (GAR 3661)
Volume 12, Chapter 13, Section 11 Maintenance Process Inspection for Part 145 (GAR 3654)	Volume 12, Chapter 13, Section 12 Authorization for Work Away From Its Fixed Location Inspection for Part 145 (GAR 3606)
Volume 12, Chapter 13, Section 13 Contract Maintenance Program Inspection for Part 145 (GAR 3607)	Volume 12, Chapter 13, Section 14 Maintenance/Alteration Requirements Inspection for Part 145 (GAR 3618)

12.13.15.9. PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. Team leaders should have had previous experience as a GACAR Part 145 Principal Inspector.

B. Coordination. This task will require coordination with the repair station management. Close coordination with the Inspector must be maintained.

12.13.15.11. REFERENCES, FORMS, AND JOB AIDS.

A. References.

- GACAR Part 43, 66, 121, 125, 135 and 145
- Volume 3, Chapter 11, Certificate Process for Part 145
- Federal Aviation Administration (FAA), Advisory Circular (AC) 145-9 (as amended), Guide for Developing and Evaluating Repair Station and Quality Control Manuals.
- FAA AC 145-10 (as amended), Repair Station Training Program.

EBOOK VOLUME 12. SURVEILLANCE

- FAA AC 43-207 (as amended), Correlation, Operation, Design and Modification of Turbofan/jet Engine Test Cells.
- FAA AC 145-5 (as amended), Repair Station Internal Evaluation Programs.

B. Forms. GACA Activity Report (GAR).

C. Job Aids.

- Figure 12.13.15.1, Elements of a Well-Designed Maintenance Organization
- Figure 12.13.15.2, GACAR Part 145 Detailed Inspection Areas

12.13.15.13. PROCEDURES.

A. Conduct Debriefings.

- 1) Brief and present the finding to the Director, Airworthiness Division.
- 2) Brief the repair station on the inspection results. Discuss any deficiencies and possible corrective actions.

12.13.15.15. TASK OUTCOMES.

A. Complete the GAR.

B. Complete the Task. Completion of this task can result in one of the following:

- Satisfactory inspection
- Communicate concerns/findings to the Director, Airworthiness Division
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

C. Document Task. File all supporting paperwork in the GACA office file.

EBOOK VOLUME 12. SURVEILLANCE

12.13.15.17. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, or other job tasks are warranted.

Figure 12.13.15.2. Part 145 Detailed Inspection Areas

EBOOK VOLUME 12. SURVEILLANCE

PART 145 DETAILED INSPECTION AREAS MANAGEMENT AND ADMINISTRATION: GAR CODE 3659		
GACAR § and/or FAA AC REFERENCE	The following checklist items are provided for guidance and should be used during the in-depth inspection.	NOTES
145.15, 145.55	Does the repair station have a designated repair station manager?	
145.15, 145.55(b) 145.57(a)	Does the repair station have adequate personnel who supervise, inspect, and perform the work?	
145.55(c)	Does the repair station have sufficient number of employees to perform the work under the ratings held?	
145.57(a)	Does the repair station have sufficient number of supervisors to direct the work performed under the repair station certificate and operations specifications?	
145.57(b)(2)	If the repair station is located outside the KSA, do the supervisors meet the regulatory requirements?	
145.57(c), 145.59(b) 145.61(c)	Do all supervisors, inspectors, and those with return to service authority, read, write, and understand English?	
145.57(a)	Does the repair station assure that all inspection personnel meet the regulatory requirements?	

EBOOK VOLUME 12. SURVEILLANCE

145.61	<p>Does the repair station have personnel authorized to approve an article for return to service?</p> <p>Does that person meet the requirements of GACAR Part 66? If the repair station is located outside the KSA, does the repair station assure that person meets the regulatory requirements?</p>	
145.15(b), 145.57(b)	<p>Does each maintenance function within the certificated repair station have an appropriately certified person that meets the requirements of GACAR Part 66, directly in charge of those functions?</p> <p>Does the supervisor for propeller and instrument functions hold an appropriate repairmen's certificate?</p>	
66.103, 66.105	<p>Do all personnel certificated with a repairmen certificate meet the regulatory requirements?</p>	
145.65(a)(1)	<p>Does the repair station have a current roster of its management and supervisory personnel, including the names of the officials who are responsible for its management and the names of all supervisors who oversee maintenance functions?</p> <p>Conduct an interview of key management personnel and check applicable certificates.</p>	
145.65(a)(2)	<p>Does the repair station have a roster of inspection personnel?</p>	

EBOOK VOLUME 12. SURVEILLANCE

145.65(a)(3)	Does the repair station have a roster of personnel authorized to sign a maintenance release approving an article for return to service?	
145.65(a)(4)	Does the repair station have a summary of the employment of each individual whose name is on the personnel roster?	
145.65(b)	Does the repair station make changes to the roster within the required 5 business days?	
145.55(b)	Does each certificated person who is directly in charge of a maintenance function have the required experience or formal training acceptable to the President?	

CERTIFICATE & OPERATIONS SPECIFICATIONS: GAR CODE 3604

GACAR § and/or FAA AC REFERENCE	The following checklist items are provided for guidance and should be used during the in-depth inspection.	NOTES
145.5(b)	Does the certificated repair station have its certificate and operations specifications available on the premises for inspection?	
145.15, 145.79(a)(1), 145.99	Are the certificated repair station ratings authorized on the certificate and operations specifications appropriate to the article being maintained?	

EBOOK VOLUME 12. SURVEILLANCE

145.23(a)(1)	Do the certificated repair certificate and operations specifications reflect the current business address?	
145.97(a)(b)	Does the repair station use a Capability List?	
145.89(d)(1), 145.97(a)(b)	Does the repair station have a procedure for revising the capability list that includes self-evaluation required by the regulations and a method with the frequency to notify the GACA?	
145.97	Does the certificated repair station perform only the specific services and functions within the ratings and classes stated in its operations specifications and/or Capability List?	
145.99(a)(1)	Does the repair station contract out any maintenance functions and has GACA approved those functions?	
145.99(a)(2)	Did the repair station provide the GACA with the required list?	
145.99(b)	Does the repair station use non-certificated persons for outside maintenance and does the repair station assure that they have a quality system equivalent to the repair station?	
145.79(a)(3) 145.99(c)	Does the repair station only provide return to service on the article?	

EBOOK VOLUME 12. SURVEILLANCE

145.81	Does the repair station perform work at locations other than its fixed location and if so, is the work authorized on the operations specifications?	
145.83(c)	Does the repair station have the necessary equipment, trained personnel and technical data, and/or as a line station, is it authorized to perform line maintenance on the operation specifications?	
145.19, 145.21	Has the certificated repair station certificate been issued or renewed?	

MANUALS AND PROCEDURES: GAR CODE 3660

GACAR § and/or FAA AC REFERENCE	The following checklist items are provided for guidance and should be used during the in-depth inspection.	NOTES
145.15, 145.87(a), 145.91(c) FAA AC 145-9	Does the certificated repair station have a repair station manual and Quality control manual that has been accepted and is current considering GACA requirements?	
145.91 (a)	Does the repair station have a quality control system?	
145.91 (b)	Do the repair station personnel follow the quality control system?	
145.87(c), 145.91(a) FAA AC 145-9	Is a current copy of the repair station manual and quality control manual accessible for use by repair station personnel?	
145.91(c)(1) FAA AC 145-9	Does the certificated repair station manual have all of the required elements?	

EBOOK VOLUME 12. SURVEILLANCE

145.89 FAA AC 145-9	Does the quality control manual have all the required elements?	
145.91(c)(3) FAA AC 145-9	Does the repair station manual and quality control manual contain examples or a reference to a separate forms manual that includes all the forms used, and instructions for the completion of those forms?	
145.59(a)(1) FAA AC 145-9	Does the repair station manual and quality control manual explain the internal inspection system and procedures in an easy to understand manner?	
145.89(j)	Does the repair station have a procedure for revising the manuals?	

TRAINING PROGRAMS: GAR CODE 3661

GACAR § and/or FAA AC REFERENCE	The following checklist items are provided for guidance and should be used during the in-depth inspection.	NOTES
145.67	Does the repair station have a GACA approved employee's training program?	
145.89(e)	Does the repair station have a procedure to revise the training program?	

EBOOK VOLUME 12. SURVEILLANCE

145.67	Does the certificated repair station maintain records of the training? Do those records reflect proficiency of all employees' with regards to personnel assigned to perform maintenance, preventive maintenance, or alterations, and inspection functions? Are the records maintained for two years?	
145.55(d)	Does the certificated repair station have records that support the experience or training requirements of non-certificated repairmen?	
145.55(c), 145.57(c) and 145.59(b)	Does the training assure all supervisory and inspection personnel thoroughly understand the limitations of the certificate and operations specifications?	
145.59(a)(1)	Does the training assure the inspection personnel are thoroughly familiar with the applicable regulations in GACAR Part 145 and the inspection methods, techniques, practices, aid, and equipment and tools used to determine the airworthiness of the article on which maintenance was performed?	
145.83	Does the training program address all of the requirements for each operator?	

EBOOK VOLUME 12. SURVEILLANCE

RECORDS SYSTEMS: GAR CODE 3605		
GACAR § and/or FAA AC REFERENCE	The following checklist items are provided for guidance and should be used during the in-depth inspection.	NOTES
145.101 and 43.11	Does the certificated repair station maintain records of all the work performed during the preceding 2 years?	
Part 43, Appendix B	Does the certificated repair station complete a GACA Major Repair and Alteration Form for each major alteration in accordance with GACAR Part 43, Appendix B, or GACAR Part 121 operators approved CAMP program?	
Part 43, Appendix B	Does the certificated repair station document major repairs in accordance with GACAR Part 43, Appendix B, or GACAR Part 121 operators approved CAMP program, and provide a signed copy to the aircraft owner?	
43.15	Does the certificated repair station approval or disapproval of inspections performed meet the requirements of the regulations?	
145.91	Does the certificated repair station have a work order system that is adequate, traceable and in accordance with the quality control manual?	
145.101	Does the certificated repair station maintain records in accordance with the regulations?	

EBOOK VOLUME 12. SURVEILLANCE

145.89(i)	Does the repair station have a procedure that describes the required records and recordkeeping system?	
FACILITIES: GAR CODES 3657 & 3601		
GACAR § and/or FAA AC REFERENCE	The following checklist items are provided for guidance and should be used during the in-depth inspection.	NOTES
145.39	Does the certificated repair station housing and facilities meet the requirements of the regulations?	
145.39(a)(2)(i)(ii)	Does the certified repair station have suitable facilities for properly storing, segregating, and protecting materials, parts, and supplies?	
145.39(a)(2)(iii)(iv)(v)	Does the certified repair station have suitable facilities for properly protecting parts and subassemblies during disassembly, cleaning, inspection, repair, alteration, and assembly?	
43.15, 145.99(b)(1) FAA AC 145-3	<p>Does the certificated repair station have special tools and equipment to ensure all required items are within calibration criteria (to include traceability to standards acceptable to the GACA)</p> <p>Special tools and equipment include those recommended by the manufacturer of the product or a GACA acceptable equivalent.</p>	

EBOOK VOLUME 12. SURVEILLANCE

43.15(a), 145.79(a)(1)(2), 145.99(a)(b) FAA AC 43-207	Does the certificated repair station utilize an engine test cell, which has been correlated to the manufacturer's specifications?	
	Does the repair station have proper segregation of work areas for environmentally hazardous or sensitive operations?	
	Did the repair station provide proper human factors considerations in the facility?	
CONTRACTUAL ARRANGEMENTS AND WORK AWAY FROM STATION: GAR CODES 3606 & 3663		
GACAR § and/or FAA AC REFERENCE	The following checklist items are provided for guidance and should be used during the in-depth inspection.	NOTES
145.15(a)(6) 145.99(a)(1)	Did the repair station provide the GACA with a list of outside maintenance functions for approval?	
145.99(a)(2)(ii)	Did the repair station provide a list of the names of the outside facilities with whom the repair station contracts maintenance functions and the type of certificate and ratings, if any, held by each facility?	
145.89(h)	Does the repair station have a procedure for maintaining and revising the contract maintenance information and notifying the GACA	

EBOOK VOLUME 12. SURVEILLANCE

145.45, 145.91, 145.99(b)(1)(2)	If the repair station contracts with a non-certificated facility, did the repair station assure the non-certificated facility has a quality control system equivalent to the system followed by the repair station?	
145.81 and 145.89(f)	Does the repair station have a procedure to govern work performed at other locations?	
145.99(c)	Is the repair station only providing return to service?	
145.105(b)	Does the non-certificated facility allow the GACA to make inspection of its facility?	
Work performed under 121 GAR CODE 3618		
GACAR § and/or FAA AC REFERENCE	The following checklist items are provided for guidance and should be used during the in-depth inspection.	NOTES
145.83, 145.89(g)	Does the repair station have procedures that meet all the requirements of the operator's CAMP program?	
TECHNICAL DATA GAR CODE 3656		
GACAR § and/or FAA AC REFERENCE	The following checklist items are provided for guidance and should be used during the in-depth inspection.	NOTES
145.45(d), 43.15	Does the repair station have technical data for its current ratings that is utilized during the performance of maintenance and alterations?	
145.45(d)	Is the technical data current?	

EBOOK VOLUME 12. SURVEILLANCE

145.45(d)	Does the repair station have a system to revise technical data?	
145.45(d)	Does the repair station utilize technical data from operators and is that data current and approved?	
145.45(d)	Is the technical data available to all personnel?	
145.45(d)	Does the repair station have a procedure for electronic retrieval of and usage of data?	

AD COMPLIANCE: GAR CODE 3667

GACAR § and/or FAA AC REFERENCE	The following checklist items are provided for guidance and should be used during the in-depth inspection.	NOTES
145.91(c)(1)(v)	Does the certificated repair station maintain current revisions of ADs applicable to the ratings held?	
145.101	Is the certificated repair station keeping accurate AD records, to include AD number, revision date, method of compliance, and if recurring action is required, the next date and/ or time such action is due?	

QUALITY CONTROL SYSTEM: GAR CODE 3608

GACAR § and/or FAA AC REFERENCE	The following checklist items are provided for guidance and should be used during the in-depth inspection.	NOTES
145.91	Does the repair station have a quality control system?	

EBOOK VOLUME 12. SURVEILLANCE

145.91(b)	Do repair station personnel follow the Quality control system?	
145.91(c)(4)	Does the quality control system have procedures for revising the system and when and how it will notify the GACA?	
145.91(c)(viii)(ix)	Does the quality system have a procedure for calibrating measuring and test equipment and taking corrective action on deficiencies?	
145.91(c)(2)	Does the quality system reference the manufacturer's inspections standard and how that data will be currency will be maintained?	
145.59	Does the certificated repair station inspection procedures manual have current procedures and instructions to ensure continuity of inspection from the incoming to the final inspections, prior to return to service of any item?	
145.91	Does the certificated repair station inspection system produce satisfactory quality control and conform to the regulations?	
145.83 and 145.95	Does the repair station inspect each article that it maintains with the inspection system contained in the repair stations quality system or under the provisions of the operator's CAMP program?	

EBOOK VOLUME 12. SURVEILLANCE

MECHANICAL REPORTING PROCEDURES: GAR CODE 3618		
GACAR § and/or FAA AC REFERENCE	The following checklist items are provided for guidance and should be used during the in-depth inspection.	
145.103	Does the certificated repair station have procedures to report defects or un-airworthy conditions as required by regulation?	
REPAIR AND ALTERATION CONFORMITY: GAR CODE 3605		
GACAR § and/or FAA AC REFERENCE	The following checklist items are provided for guidance and should be used during the in-depth inspection.	NOTES
145.43, 145.81, 43.15,	Does the certificated repair station utilize approved data for all repairs and alterations?	
AGING AIRCRAFT PROGRAM: GAR CODE 3618		
GACAR § and/or FAA AC REFERENCE	The following checklist items are provided for guidance and should be used during the in-depth inspection.	NOTES
145.83	<p>Now or within the last two years, has the certificated repair station performed any aging aircraft inspections for operators? If so, does the certificated repair station have adequate facilities and equipment to perform aging aircraft inspections?</p> <p>Does the certificated repair station have trained, qualified, and skilled personnel and the necessary technical data to perform such inspections?</p> <p>Is the certificated repair station accomplishing the aging aircraft inspection in accordance with</p>	

EBOOK VOLUME 12. SURVEILLANCE

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 13. PART 145 INSPECTIONS

Section 16. Providing Essential Maintenance Before, During, and After a Labor Dispute or Bankruptcy Inspection for Part 145

12.13.16.1. GACA ACTIVITY REPORT (GAR).

A. 3644 (AW)

12.13.16.3. OBJECTIVE. This section provides information and guidance to be used by aviation safety inspectors (Inspectors) when conducting surveillance of a General Authority of Civil Aviation Regulation (GACAR) Part 145 repair station located either inside or outside of the Kingdom of Saudi Arabia (KSA) before, during, and after a labor dispute or bankruptcy. A repair station experiencing labor issues may be unable to meet financial obligations, and filing for bankruptcy protection may affect necessary operational and maintenance activities, thereby adversely impacting safety. During these periods, General Authority of Civil Aviation (GACA) may require an increased and focused surveillance plan.

12.13.16.5. GENERAL. Safety is a concern when any of the above events cause disruption in an essential maintenance provider's (repair station) operation. The repair station is responsible for recognizing current or potential labor or financial problems that could adversely affect safe operations. Repair station management personnel should take a proactive role in these matters and not just react to events as they happen. The repair station should communicate with its Inspector and keep him apprised of operational impacts. In addition, the operator should present a comprehensive brief to the Inspector on how they will continue to operate and meet requirements using management personnel. In some repair stations, certificated repairmen are considered management and should not be affected by a labor dispute. In other repair stations, the repairmen may be affected. In this case, the Inspector should verify that there are enough certificated personnel available to adequately supervise or perform maintenance as required by the workload. Using the self disclosure program, the repair station management should inform the Inspectors of any significant safety related findings that were identified through its monitoring and oversight programs. The Inspector may learn of events leading to a labor dispute or bankruptcy from news media, normal surveillance, the public, other government entities, or other means. Regardless of the source of information, the GACA should initiate immediate action. Since these problems may raise questions about a repair stations ability to safely conduct operations, GACA management and Inspectors should be alert to indicators of

EBOOK VOLUME 12. SURVEILLANCE

financial problems and be ready to take immediate action if required.

A. Indicators. One or more of the following indicators may show that a repair station is experiencing financial problems:

- Requests for changes in training programs
- Changes in the upkeep of equipment
- Unrest among the work force
- Trouble maintaining parts inventories, excessive back orders, Cash On Demand-only basis with suppliers
- Parts being purchased from non-accredited parts brokers
- Data not current
- Increasing number of personnel furloughs and layoffs, especially of non-production personnel
- Changes in maintenance contracts with operators
- Increased use of non-certificated contractors
- Increasing number of personnel layoffs
- Changes in substantial maintenance contracts
- Increase in repeat/warranty work
- Increase turnover rate among employees/management personnel
- Delays in meeting payroll
- Increased frequency of complaints against the repair station
- Labor problems reported in the media that appear to indicate financial distress

EBOOK VOLUME 12. SURVEILLANCE

- Voluntary or involuntary salary

B. Bankruptcy/Potential Bankruptcy. Financial difficulties may occasionally lead a repair station operator to file for bankruptcy protection. In these cases, early GACA notification is often not practical. Therefore, it is essential that substantial maintenance providers (repair stations) intending to operate during bankruptcy proceedings develops an operating plan in partnership with the GACA. Since judgments and decisions of the bankruptcy court should be taken into account, it may be impractical for the operator to project a completion date for all operational changes. The operator should continue to operate at all times in accordance with the GACARs.

NOTE: The regulations do not specifically require repair stations to notify the GACA of impending bankruptcies. However, GACAR § 145.45, requires a repair station to have the equipment, material, and data required by its operations specifications (OpSpecs). GACAR § 145.55, provides the minimum requirements for personnel.

C. Surveillance. When a repair station experiences a labor dispute or potential bankruptcy, the GACA may need to modify the existing surveillance plan to assess the repair station's ability to conduct safe operations. The surveillance program should be modified to meet any unique circumstances and operational changes proposed by the repair station. The surveillance program should be based upon risk assessment. It should focus on high-risk areas (i.e., those with failure consequences resulting in the highest severity level and those that have a high likelihood of occurring).

D. Communications.

1) **Repair Station Communications.** The Inspector should initiate and maintain an open line of communication with the repair station. The Inspector and repair station should continually discuss the repair station's operational status and projected changes, including GACA surveillance adjustments. Such collaborative communication is intended to maintain a proactive oversight of the operation.

2) **Internal GACA Communications.** Labor disputes and potential bankruptcy actions generate many inquiries, complaints, and opinions from other government agencies, the public, and other sources. Therefore, the Inspector should inform their supervisor of any concerns.

EBOOK VOLUME 12. SURVEILLANCE

E. Resumption of Operations after Labor Dispute or Bankruptcy. After the labor dispute or bankruptcy has been resolved, normal operations might not be resumed immediately. Upon resumption of normal operations, the GACA may need to revise its level and focus of surveillance. It is important to maintain internal GACA coordination for agreement on the appropriate levels of surveillance.

12.13.16.7. REFERENCES, FORMS, AND JOB AIDS.

A. References. GACAR Part 145

B. Forms. GACA Activity Report (GAR).

C. Job Aids.

- Figure 12.13.16.1, Monthly Surveillance Report Checklist

12.13.16.9. RESPONSIBILITIES AND PROCEDURES.

A. Repair Stations Plan. When an operator faces financial difficulties (e.g., pending bankruptcy), the operator should develop and submit a business plan that outlines operational impacts and management initiatives.

1) *Meet with the Repair Station's Accountable Management.* The Inspector should schedule a meeting to brief the repair station's key management personnel to discuss the need for a business plan.

a) At the initial meeting, the Inspector will inform the repair station manager that they should develop and submit a business plan that should include the following elements:

- Address any changes the air agency/repair station will make during the transition period that will require GACA approval or acceptance, including possible reduction in ratings and changes to OpSpecs

- Address possible operational impacts and reduced capabilities (staff reduction, contracting out, etc.)

- Address initiatives for continued compliance with regulatory requirements and

EBOOK VOLUME 12. SURVEILLANCE

safe operating practices during the transition

- Indicate interim operating methods and procedures with provisions for additions or modifications to the plan when necessary
- Include the repair stations estimated schedule of when changes will be implemented

NOTE: Once the labor dispute or bankruptcy occurs, both the operator and the GACA should work proactively and in partnership to implement and execute the business and surveillance plans. The operator and GACA should discuss any significant safety related findings either generated through the repair station's own internal tracking and oversight programs or the GACA surveillance activities.

- b) The Inspector should advise the repair station's manager that the GACA is prepared to respond to business plan modifications in a timely manner; however, the repair station should provide timely notification to the GACA of these changes.
- 2) *Review the Business Plan.* The Inspector should review the repair station business plan to ensure that it covers the requirements listed in subparagraph A.1) a) above. If the Inspector finds deficiencies or potential problem areas in the business plan, they should meet with the repair station to work through the subject areas.
- 3) *Develop a Surveillance Plan, if Necessary.* The repair station may decline to develop a business plan or share the contents of such a plan with the Inspector. In such cases, the Inspector should develop a surveillance plan with increased emphasis placed in areas of suspected moderate and high risk.

B. Surveillance Program.

- 1) The GACA Airworthiness Division will continually review its surveillance program and adjust it to meet the repair station changing needs. In addition, the GACA should complete a Monthly Surveillance Report (see Figure 12.13.16.1).
- 2) All GACA surveillance should be recorded using the appropriate GAR activity codes listed in this chapter.

EBOOK VOLUME 12. SURVEILLANCE

3) Assessment and Coordination of Surveillance Data.

a) Information obtained from surveillance reports, the Inspector, and GACA management should be evaluated along with other related sources, with special emphasis on the following areas:

- Noncompliance with regulations or safe operating practices
- Negative trends
- Isolated deficiencies or incidents
- Causes of noncompliance trends or isolated deficiencies

b) The results of any assessment of surveillance data should be provided to the Inspector. The Inspectors will communicate the necessary information to the repair station's manager.

c) The Inspector will debrief the repair station's manager.

- Discuss negative trends or findings discovered by the surveillance
- Discuss possible corrective action(s)
- Inform the repair station accountable management team that the Inspectors will forward an official written notification of findings
- Inform the repair station accountable management team to submit a corrective action plan

NOTE: The Inspectors and the repair station's manager should agree on time limits for the corrective action plan during the debriefing. Negotiations over time limits can be done later if mitigating circumstances arise.

4) *Follow-up Surveillance.* Once a corrective action has been completed, the GACA will schedule periodic follow up surveillance (completed within six months) in the areas of the deficiency to determine the effectiveness of the repair stations corrective action.

EBOOK VOLUME 12. SURVEILLANCE

C. Resumption of Normal Operations after a Labor Dispute, Strike, or Bankruptcy. In some cases after a repair station emerges from a labor dispute or bankruptcy, the reduction in operations is followed by rapid expansion. The GACA should develop a follow-up surveillance plan. When monitoring repair stations during periods of growth or major change, the surveillance plan will confirm whether the operator is able to continue operating in compliance with the regulations.

12.13.16.11. FUTURE ACTIVITIES. The Director, Airworthiness Division should:

- Schedule and accomplish follow-up surveillance(s) (completed within 6 months) specific to the areas in which the repair station management has taken corrective actions to correct deficiencies found during the labor dispute or bankruptcy. (Task outcomes may vary).
- Schedule and accomplish follow-up post-labor dispute or bankruptcy surveillance activities
- Keep all supporting documentation

EBOOK VOLUME 12. SURVEILLANCE

Figure 12.13.16.1. Monthly Surveillance Report Checklist

The GACA monthly surveillance report should address the following:

1. External stress issues that the repair station is experiencing, such as:
 - a. Labor disputes (pre-contract)/slowdowns/work disruptions/maintenance personnel refusal to work overtime).
 - b. Management issues (lockouts/refusal to negotiate).
 - c. A bankruptcy or potential bankruptcy.
 - d. Changes in the repair station's key management.
 - e. Significant changes in repair station personnel.
 - f. Significant changes in equipment (office type, ground support, aircraft, shops, etc.).
2. A review of significant surveillance findings.
3. Any changes to the operator's business plan.
4. Corrective actions (discrepancies that the repair station corrected during this reporting period).
5. Changes in management personnel.
6. Changes in technical support personnel.
7. Recent pending enforcement cases.
8. Other areas reflecting changes determined by the GACA.
9. Any safety concerns.
10. Changes in ratings and OpSpecs.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 14. PART 147 INSPECTIONS

Section 1. Inspection of Part 147

12.14.1.1. GACA ACTIVITY REPORT (GAR).

- A. 3650 (AW) (Facility)
- B. 3659 (AW) (Records)
- C. 3661 (AW) (Training Curriculum)

12.14.1.3. OBJECTIVE. This chapter provides guidance for conducting surveillance of certificated aviation maintenance technician schools (AMTS) under General Authority of Civil Aviation Regulation (GACAR) Part 147.

12.14.1.5. GENERAL.

A. Inspections. A certificated AMTS must be monitored for adherence to its curricula and continued compliance with the certification requirements and operating rules.

B. Inspection Scheduling. GACAR § 147.13 allows inspection of a school at any time to determine its compliance with GACAR Part 147.

1) *Formal Inspections.* The purpose of a formal inspection is to determine whether the school continues to meet the requirements under which it was certificated.

a) The actual number of formal inspections may vary depending upon the General Authority of Civil Aviation (GACA) staffing and workload, the particular school to be inspected and other factors. At a minimum, each school should have one formal inspection per year.

b) At the inspection exit briefing, the school must be provided with verbal notification of discrepancies found during the formal inspection. The exit briefing will be followed up with a written list of areas of noncompliance.

EBOOK VOLUME 12. SURVEILLANCE

- c) Before beginning subsequent inspections and surveillance of the school, the aviation safety inspector (Inspector) will review the current office file, if available, to identify any previous deficiencies. The Inspector will inspect the school to assure compliance in these areas.
- 2) *Informal Inspections.* Generally, an informal inspection will be less comprehensive than a formal inspection. This inspection may be unannounced, at the Inspector's discretion. The purpose of the informal inspection is to evaluate a specific area of the operating rule or to ensure the program is effective.

- a) The frequency of informal inspections will vary according to the needs of the individual school and the GACA workload.

12.14.1.7. SURVEILLANCE OBJECTIVES.

A. Instruction Time. Based on a variety of indicators, it is apparent that some schools do not provide the number of hours of instruction specified in their approved curriculums. One of the objectives of surveillance is to ensure that typical "time loss" items do not affect curriculum hours. Below are some examples of "time loss":

- Instructors ill or on leave (in small schools, this could result in classes being dismissed or students being sent to a room to study)
- Weeks during which students are scheduled for private study and/or testing outside of the approved curriculum
- Class outings that take time away from instructional hours
- Student achievement days, sports days, and special event days
- Instructor's meetings and grading days
- Absences beyond those permitted in the GACA approved curriculum
- Classroom time spent on non-instructional activities, such as school administrative work and ancillary activities, etc.
- Any other activity that intrudes on instructional time

EBOOK VOLUME 12. SURVEILLANCE

NOTE: Published school calendars, individual student enrollment schedules, student makeup schedules, and class schedules are good sources of surveillance information.

B. Credit for Prior Instruction or Experience.

1) School records must show the basis for crediting previous instruction or experience, including records of tests and copies of documents. School records must also indicate the exact curriculum subjects to which previous instruction is credited.

2) GACAR § 147.81(c)(1) allows credit for instruction satisfactorily completed at the following:

- An accredited university, college, or junior college
- An accredited technical school, trade school, vocational school, or high school
- A military technical school
- An AMTS, (other than the crediting school) before or after its certification.

NOTE: Accreditation, as referenced in GACAR Part 147, refers to schools accredited within the Kingdom of Saudi Arabia (KSA). Therefore, any credit that may be granted for prior instruction in foreign schools must be approved by GACA.

NOTE: GACAR § 147.81(c)(iv) must not be interpreted as requiring a student to retake the general portion of the curriculum after successfully completing one rating and enrolling in a course of study for another rating. The general portion does not need to be taken twice, provided that it is clearly separate from both the airframe, powerplant and avionics portions and conforms to the requirements of GACAR Part 147, Appendices A and B.

3) The recordkeeping requirements of GACAR § 147.101 for previous experience or instruction are applicable. See Volume 4, Chapter 29, Section 1, Evaluate Curriculum/Revision and Instructor Qualifications for Part 147, for details.

C. Progress Records or Charts. Progress records or charts need not show grades for practical laboratory work if these grades are available in another record.

EBOOK VOLUME 12. SURVEILLANCE

D. Transcripts. Grade transcripts must be available to the student regardless of whether the student graduates.

- 1) The transcript must be clearly distinguishable from a graduation certificate and must be limited to only those subjects required under GACAR Part 147.
- 2) A student will be issued a graduation certificate or certificate of completion only if all curriculum requirements have been completed, either by taking and passing the specified courses or by being properly credited for them.

E. Quality of Instruction. A school must provide instruction of such quality that, of its graduates of a curriculum for each rating who apply for a mechanic certificate or additional rating within 60 days after they are graduated, the percentage of those passing the applicable GACA written tests on their first attempt during any period of 24 months is at least equal to the national passing norm minus the number 20.

- 1) Corrective action may need to be initiated if the percentages fall below those specified in GACAR § 147.33.
- 2) While poor test performance alone may not indicate poor instruction, it may be an indication that some aspects of the school's operation are inadequate or ineffective.

F. School Norms. When an individual school norm is significantly lower than other national norms while claiming to be performing in excess of the requirements as permitted by GACAR § 147.33, corrective action, i.e., changes to the course curriculum, will need to be made to improve the school's performance.

G. Aviation Maintenance. A report providing information about the test performance of school graduates should be provided to the GACA for review. These reports may be used to monitor school performance and to determine whether a particular school meets the quality of instruction provisions of GACAR § 147.38. Reports should be requested any time that school performance is found to have fallen below the requirements in GACAR Part 147, or when other information deems it to be necessary.

- 1) Reports on school performance should contain a record of test activity and performance of graduates of the subject school, who apply for a mechanic's written test for the first time within 60 days after graduation.

EBOOK VOLUME 12. SURVEILLANCE

- 2) A summary report issued by the school voluntarily and on a scheduled basis, will serve to conserve GACA manpower in monitoring school activity and performance.
- 3) A summary report for graduates by applicant name from a subject school should contain a record of the test performance for a specified time period. It should be produced by the school and forwarded to the GACA.
- 4) “Non-school” reports are quarterly reports that may be created by the GACA. These reports are made for the following:
 - Applicants who graduate from a certificated school but who take the mechanic’s test for the first time more than 60 days after graduation
 - Applicants who qualify for testing through actual experience and are not graduates of a certificated school

12.14.1.9. Prerequisites and Coordination Requirements

A. Prerequisites.

- Knowledge of GACAR Part 43, 66 and 147

12.14.1.11. REFERENCES, FORMS, AND JOB AIDS.

A. References.

- GACAR Part 43, 66, and 147
- Volume 3, Chapter 12, Sections 1, Certification Process for Part 147

B. Forms.

- GACA Activity Report (GAR)

12.14.1.13. PROCEDURES.

A. Review GACA office files.

EBOOK VOLUME 12. SURVEILLANCE

- 1) Review the school's approved curriculum.
- 2) Check the inspection history, if applicable.

B. Review Enrollment Records. Determine that the number of students enrolled is not more than the number approved in the school's application. Determine if the school can effectively instruct the number of students actually enrolled.

C. Review Student Records. Determine whether records are available for all students. Select the records of one or two recently graduated students and one or two current students, and perform a total verification ensuring:

- 1) The attendance system shows the hours of absences allowed and makeup provisions for subject material missed.
- 2) The attendance system does not permit the time required to makeup missed material to be deducted from regular instruction time.
- 3) The approved attendance system is being followed.
- 4) Recordkeeping meets the requirements of GACAR § 147.101.

D. Examine the System for Determining Final Course Grades. Ensure that the system reliably distinguishes between successful students and unsuccessful students (See Volume 4, Chapter 29, Section 1).

- 1) Ensure all grade reports and records identified as part of the approved grading system meet the recordkeeping requirements of GACAR §§ 147.101 and 147.105.
- 2) Ensure that the approved grading system is being followed.

E. Ensure Maintenance of Instructor Requirements. Determine whether instructor resources are adequate and effective, and that they meet the requirements of GACAR § 147.63.

- 1) Check the instructor/student ratio against the maximum allowable ratio of 1:25 in a shop or lab. If necessary, require a lower ratio in any shop or lab to provide adequate instruction and supervision of students.

EBOOK VOLUME 12. SURVEILLANCE

- 2) Determine if instruction given by specialized instructors is well coordinated with aviation technical subjects, i.e., math instructors might teach weight and balance principles. Evaluate the suitability of non-certificated instructors to teach certain general courses on an individualized basis.
- 3) Determine whether the school has positive control over what is taught and when it is taught, in accordance with its approved curriculum.
- 4) Observe classes and conduct interviews to determine individual instructor effectiveness. While it may be permissible to talk to instructors and/or students in an ongoing lab or shop session, try to avoid disrupting any theory class while it is in session.
- 5) As discussed in Volume 4, Chapter 29, Section 1, encourage the school to assess instructor performance regularly and provide for instructor improvement.

F. Ensure School Space Usage Allows for Appropriate Separation of Classes in Session.
(GACAR § 147.43) (see Volume 4, Chapter 29, Section 2, Evaluate Facilities, Equipment, Materials, Tools, and Records for Part 147).

12.14.1.15. TASK OUTCOMES.

A. Complete the GAR.

B. Completion of this task may result in the following:

- Satisfactory inspection
- Communicate concerns/findings to the Director, Certification and Licensing Division
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

12.14.1.17. FUTURE ACTIVITIES. Based on inspection findings, determine whether increased surveillance, additional enforcement, other job tasks, and/or additional coordination are required between the Inspector and the Office Manager.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 15. MISCELLANEOUS PART 61, 91, 121, 125, 135, 141 AND 145 SURVEILLANCE/INSPECTIONS

Section 1. Certificated Flight Instructor Surveillance for Parts 61 and 141

12.15.1.1. GACA ACTIVITY REPORT (GAR).

A. 1662 (OP)

12.15.1.3. OBJECTIVE. This task determines whether a certificated flight instructor (CFI) continues to perform to the standards of certification.

12.15.1.5. GENERAL.

A. General Process. Although flight instructor certificates are renewed every 24 months, the surveillance of individual flight instructors and their activities should take place on a random basis in the interim. High activity CFIs must receive a higher level of supervision and surveillance because this segment of the CFI population is responsible for a larger percentage of pilot training and certifications. A high activity CFI recommends at least 20 applicants annually for a practical test. In addition to routine surveillance, an aviation safety inspector (Inspector) should take appropriate action documenting those actions in the GACA Activity Report (GAR), if any of the following circumstances exist:

- A justifiable public complaint is directed toward a CFI
- A CFI is involved in an accident or incident
- A student pilot instructed by the CFI is involved in an accident or incident

B. Surveillance. Since the flight instructor has a responsibility for aviation safety, Inspector meetings with flight instructors provide an opportunity to discuss current regulations, procedures, and techniques for the instructors to use in fulfilling that responsibility. These meetings also provide an opportunity for the Inspector to observe the flight instructor providing instruction to a student.

EBOOK VOLUME 12. SURVEILLANCE

C. Inspector's Conduct. During surveillance, the Inspector must keep interference with the flight instructor's routine to a minimum. The purposes of the Inspector's discussion with the flight instructor are:

- To inform the flight instructor of changes in regulations
- To determine the flight instructor's capabilities

D. Initiation of Surveillance. The following are examples of why an Inspector might initiate the surveillance of a flight instructor:

- Observations made during a pilot school inspection
- A result of a random visit to an aerodrome
- If the instructor's students are involved in an accident or incident
- If a CFI's students have a failure rate of 30 percent or greater

12.15.1.7. METHODS OF SURVEILLANCE. The scope and content of the inspection is left to the discretion of the Inspector, who may combine it with other inspections mandated by the General Authority of Civil Aviation (GACA) annual surveillance program. A number of factors need to be considered, including the Inspector's personal knowledge of or previous experience with the instructor. Instructor surveillance may include:

- A discussion with the instructor
- An observation of performance
- Any combination of the inspection opportunities above

A. Discussion. Discussions held with instructors are comparable to the oral portion of a practical test. Through discussion, the Inspector determines the instructor's knowledge of current regulations and operational techniques. The discussion also allows the Inspector to brief the instructor on the latest GACA policy. As different situations arise, other items or situations may cause an Inspector to initiate discussions with the flight instructor. If a school employs an instructor, the Inspector must examine employment records related to aviation activities and note the instructor's performance on school standardization checks and other

EBOOK VOLUME 12. SURVEILLANCE

training.

B. Observation of Performance. The Inspector can accomplish the observation of an instructor's performance in several ways.

- 1) The Inspector may request that the instructor conduct a standardization flight check with the Inspector acting the role of a student preparing for a particular certificate or rating. While role-playing as a student, the Inspector must note both the instructor's teaching technique and piloting skills.
- 2) The Inspector may conduct spot inspections of the instructor's students. It is recommended that the Inspector check more than one student to gain a better perspective of the instructor's ability.
 - a) The Inspector can fly with the student and request procedures or maneuvers appropriate to the student's level of progress. The Inspector must use the appropriate practical test standards (PTS) to evaluate the student's performance. However, the Inspector must tell the student that the flight is not a practical test and cannot be passed or failed. The Inspector might request the reexamination of a pilot whose skills are found to be deficient.
 - b) If a GACAR Part 141 school employs an instructor, the Inspector could conduct a stage test of one of the instructor's students. If the Inspector elects to use this form of surveillance, he should refer to Volume 4, Chapter 8, Section 5, Conduct a Stage Test.
 1. If applicable, the Inspector must ensure that the instructor's records include the number of students recommended for certificates or ratings, their pass/fail rate, and the number of students endorsed for their first solo or solo cross-country flight. A high failure rate among students recommended for certificates or ratings might indicate a weakness in instruction skills. The Inspector must discuss this with the instructor.
- 3) The Inspector could observe the flight instructor conducting ground training. The instructor must use acceptable teaching methods and the lesson content must conform to acceptable aeronautical information. If an approved school employs an instructor, his teaching must adhere to the content of the training course outline (TCO).

EBOOK VOLUME 12. SURVEILLANCE

12.15.1.9. SPECIAL EMPHASIS ITEMS. The following paragraphs provide information for Inspectors to consider when conducting surveillance of flight instructors.

A. Dangers Associated with Nonstandard, Unstabilized Landing Approaches. Although not a widespread practice, instructors occasionally teach nonstandard procedures. GACA considers procedures to be nonstandard when they do not adhere to the pilot's operating handbook (POH) and/or the Aircraft Flight Manual (AFM). This practice may contribute to instructional accidents.

B. Adherence to Established Procedures. To ensure that instructors teach the proper procedures that lead to a safe approach and landing, Inspector's must discuss the following areas with instructors:

- The importance of adhering to procedures specified in the AFM
- The importance of properly instructing small aircraft pilot applicants in standard traffic patterns for a stabilized approach and landing
- Ensuring a normal descent to the runway touchdown zone by establishing a stabilized flight path using appropriate power settings, airspeeds, and sink rates

12.15.1.11. PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. Knowledge of the requirements of General Authority of Civil Aviation Regulation (GACAR) Part 61.

12.15.1.13. REFERENCES, FORMS, AND JOB AIDS.

A. References.

- GACAR Parts 1, 61, 91 and 141
- Flight Instructor Practical Test Standard (PTS) (appropriate to the aircraft category)

B. Forms. GACA Activity Report (GAR).

C. Job Aids.

EBOOK VOLUME 12. SURVEILLANCE

- Figure 12.15.1.1, Flight Instructor Evaluation Job Aid
- Figure 12.15.1.2, Sample Letter to Approved School Confirming Flight Instructor's Unsatisfactory Performance

12.15.1.15. PROCEDURES.

A. Schedule Surveillance. Schedule the flight instructor surveillance.

B. Open GAR File.

C. Arrive for Surveillance.

- 1) If not already done, select the instructor to be surveyed.
- 2) Present GACA Inspector credentials to the instructor and explain the nature of the surveillance.

D. Examine Certificate. Request the instructor's airman, medical, and instructor certificates. Examine them for appropriateness and validity.

- 1) The instructor must hold at least a commercial pilot certificate with an instrument rating.
- 2) The instructor must hold at least a Class 1 medical certificate if the instructor is the pilot-in-command (PIC) during instruction.
- 3) The flight instructor must hold a flight instructor certificate appropriate to the category, class, and rating of the aircraft used for instruction.

E. Conduct Discussion with Instructor.

- 1) Discuss areas of special emphasis. Ask the instructor if any safety problems have been encountered during instruction or other flight. Invite the instructor's comments.
- 2) Bring to the flight instructor's attention areas that are above average or outstanding. Cover any areas of unsatisfactory performance.
- 3) When GACA implements a new regulation or amends an existing rule, discuss it

EBOOK VOLUME 12. SURVEILLANCE

thoroughly with the flight instructor.

F. Observe Performance. Proceed with the surveillance by observing the flight instructor's performance. Determine which method of observation to use:

- Standardization flight check
- Student flight check
- Ground training

1) During standardization flight checks, the Inspector (acting as a student) should:

- a) Discuss with the flight instructor the maneuvers and procedures that will be required during the check.
- b) Evaluate the instructor's performance, demonstration of flight maneuvers, and ability to discern and correct student errors during the flight. If the instructor performs a nonstandard maneuver or procedure, discuss the correct performance with the instructor.
- c) When they complete the flight, debrief the instructor on any matters that he did not discuss during the flight.

2) During student flight checks, the Inspector should:

- a) Fly with one or more students, preferably students working on various certificates or ratings, and observe their performance.
- b) Conduct a stage test of one or more students if the flight instructor being inspected is employed by a Part 141 approved school (see Volume 4, Chapter 8, Section 5, Conduct a Stage Test).
- c) Request and examine students' records. Note the number of students recommended for a certificate or rating and the number of students who passed or failed. Review the records of first solo and first solo cross-country flights and note any problems the students encountered. Discuss with the instructor the manner or method in which the problems were resolved.

EBOOK VOLUME 12. SURVEILLANCE

- 3) During observation of ground training, the Inspector should:
- Observe the flight instructor's performance.
 - Determine if the instructor at a GACAR Part 141 school adheres to the appropriate TCO.
 - Determine if the instructor has adequate knowledge of the subject being taught.
- G. Complete the Evaluation.** Evaluate the instructor's performance in a private area after the applicant/student is debriefed.
- Indicate "satisfactory" on the Flight Instructor Evaluation Job Aid (Figure 12.15.1.1), if the discussion and observation indicate satisfactory instructional skills.
 - Indicate "unsatisfactory" on the Flight Instructor Evaluation Job Aid; if the discussion and observation indicate unsatisfactory instructional or piloting skills (refer to Volume 9, Chapter 7, Section 1).
 - Debrief the flight instructor on the results, whether satisfactory or unsatisfactory. Recognize strengths and suggest methods to improve weaknesses. If the inspection was unsatisfactory and the instructor is employed by a GACAR Part 141 school, inform the school of the results and confirm in writing (Figure 12.15.1.2).
 - File the job aid in the GACA office file.

H. Complete GAR. Close GAR.

12.15.1.17. TASK OUTCOMES. Completion of this task results in one of the following:

- An indication of satisfactory on the Flight Instructor Evaluation Job Aid
- An indication of unsatisfactory on the Flight Instructor Evaluation Job Aid
- A letter to an approved school when a flight instructor's performance is unsatisfactory

EBOOK VOLUME 12. SURVEILLANCE

12.15.1.19. FUTURE ACTIVITIES.

- The flight instructor may be subject to a reexamination
- The flight instructor may be the subject of future surveillance

EBOOK VOLUME 12. SURVEILLANCE

Figure 12.15.1.1. Flight Instructor Evaluation Job Aid

Instructor's Name:	Certificate No.:	Expiration Date:				
Aerodrome:	Company:	Pilot School Certificate No.:				
ITEM			SAT	UNSAT		
Discussion with instructor						
Observation of instructor performance						
Standardization flight check with instructor						
Oral						
Teaching techniques						
Piloting techniques						
Student Records						
Number of students recommended for certificate or rating _____						
Passed _____ Failed _____						
Number of student first solos _____						
Number of student solo cross country flights _____						
Student spot check (Flight - Use the practical test standards appropriate for the student and any or all of the following maneuvers to judge the instructor's teaching ability.)						
Preflight operations						
Taxiing						
Radio voice procedures						

EBOOK VOLUME 12. SURVEILLANCE

Normal takeoffs and landings			
Crosswind takeoffs and landings			
Short field takeoffs and landings			
ITEM	SAT	UNSAT	N/A
Flight at minimum controllable airspeed			
Stalls and stall recoveries			
Emergency operation of equipment			
Turns about a point			
Forced landings			
Gliding spirals			
Eights-on-pylons			
Eight-around-pylons			
Steep power turns			
Lazy eights			
Chandelles			
Cross-country flight			
Cross-country emergencies			
Use of radio aids			
Instrument flight			

EBOOK VOLUME 12. SURVEILLANCE

Overall student evaluation				
Ground instruction				
Overall instructor evaluation: (Circle one)				
Satisfactory	Unsatisfactory			
Remarks:				
Inspector's signature _____		Date _____		

EBOOK VOLUME 12. SURVEILLANCE

Figure 12.15.1.2. Sample Letter to Approved School Confirming Flight Instructor's Unsatisfactory Performance

GACA Letterhead

[Date]

[Address of school]

Dear [Name]:

This confirms the results of a flight instructor inspection held at your school on [inspection date]. During the inspection, we reviewed [instructors' names] by [inspection type]. We found [instructor name] to be deficient in the following areas:

[Indicate all areas where the flight instructor was deficient]

[Suggest how the deficiencies can be corrected]

[Indicate if a reexamination is in order]

If the flight instructor is a chief instructor for a course of training, indicate that training in that course can continue for 30 days. After that time, if he does not resolve the discrepancies, a new chief instructor must be named.

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

[signed by the Inspector]

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 15. MISCELLANEOUS PART 61, 91, 121, 125, 135, 141 AND 145 SURVEILLANCE/INSPECTIONS

Section 2. Flight Instructor Refresher Clinic Inspection

12.15.2.1. GACA ACTIVITY REPORT (GAR).

A. 1690 (OP)

12.15.2.3. OBJECTIVE. The objective of this inspection task is to determine whether a previously approved General Authority of Civil Aviation Regulation (GACAR) Part 141 Flight Instructor Refresher Course (FIRC) is conducted within the guidelines of its approved training course outline (TCO).

12.15.2.5. GENERAL. While the aviation safety inspector (Inspector) should conduct surveillance or monitor an FIRC on an annual basis, it is generally done on a more flexible basis and may develop throughout the year.

12.15.2.9. COURSE MONITORING.

A. Program Quality. GACA monitoring is the key to the quality of the FIRC. The TCO may be the finest available, but only proper GACA monitoring and control can ensure the necessary quality.

B. TCO Review. Upon notification of proposed course dates the Inspector should contact the pilot school and request that a copy of the TCO be available on the site for review.

1) During the development of the TCO, applicants are encouraged to include new techniques, teaching concepts and diversity in the subjects presented. While every attempt is made to ensure the technical accuracy of each lesson's content during the approval process, monitors may occasionally notice the instructor presenting subject material that does not represent the GACA viewpoint. Therefore, the monitor's duties should include the following:

a) Ensure adherence to each TCO.

EBOOK VOLUME 12. SURVEILLANCE

1. The Inspector must notify the chief instructor of any deviation from the approved TCO. The Inspector may also write a follow-up report to their supervisor.
 2. The Inspector should not attempt to disrupt or halt the course proceedings.
 3. The decision to not renew flight instructor certificates based on the content of the course can only be considered when no other appropriate course of action is evident.
- b) Ensure that the course content is technically accurate.
1. During the approval process, extreme care is taken to ensure the technical accuracy of the course content.
 2. If the monitor detects areas of inaccuracies or positions that do not conform to GACA policy, he should notify the chief instructor at the conclusion of that lesson.
 3. While there will be instances when monitors detect areas in which changes could be made that would improve the quality of the course, they must only offer such suggestions if they are specifically solicited by the chief instructor.
 4. The monitor's chief concern is that the instructor's lessons are technically accurate and that he follows the approved TCO.
- c) Since some TCOs are copyrighted, no attempt should be made to reproduce the TCO. Upon conclusion of the course, the TCO must be returned to the pilot school, if requested; but a copy of the TCO must be filed in the GACA office for future reference.

12.15.2.11. GRADUATION CERTIFICATES. At the completion of each course, the approved organization will issue a printed graduation certificate to each successful graduate. The certificate will be sequentially numbered and contain appropriate information.

A. Graduation Records. The pilot school will maintain a record for 12 months of all graduation certificates issued, certificates denied, and the reasons for denial. Therefore, if a certificate is presented to the GACA as the basis for certificate renewal and there is any doubt of its

EBOOK VOLUME 12. SURVEILLANCE

authenticity, the Inspector may check with the issuing organization.

B. Un-renewable Instructors. Instructors who are considered marginal or not renewable through the refresher course process must seek renewal by the normal process (i.e., a practical test). The GACA is responsible for ensuring instructor competence at any time it becomes suspect and must not wait until such a certificate comes up for renewal.:.

12.15.2.13. COURSE MATERIALS. The GACA expects the pilot school conducting the course to provide all handout materials associated with the conduct of the course. While the organization may copy or reproduce official GACA publications, the GACA does not expect to assume the responsibility for furnishing materials.

12.15.2.15. GUIDELINES FOR SURVEILLANCE.

A. GACAR § 61.201 permits the holders of valid and unexpired flight instructor certificates to renew their certificates by satisfactorily completing a minimum of 16 hours of ground or flight instruction, or both, in an GACA-approved Part 141 FIRC.

B. Inspectors must be aware that GACA approval of FIRC programs expires on the last day of the 24th month from the date of issue.

C. Inspectors must, when conducting surveillance and monitoring of FIRCs, determine that the GACA approval of the FIRC is current and valid. Part 141 pilot schools must be able to present evidence that they:

- 1) Were issued by GACA, dated during the previous 24 months, showing either initial or final approval of their flight instructor refresher training course, *or*
- 2) States continuation of approval based on an evaluation of the existing TCO and a finding that the continuation of approval is warranted.

12.15.2.17. PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. This task requires knowledge of the requirements of GACAR Part 61, of GACA policies, and qualification as an Inspector (Operations).

B. Coordination. This task requires coordination between the Inspector and the GACAR Part 141 pilot school.

EBOOK VOLUME 12. SURVEILLANCE

12.15.2.19. REFERENCES, FORMS, AND JOB AIDS.

A. References.

- GACAR Parts 1, 61, 91, 141 and 183

B. Forms. GACA Activity Report (GAR).

C. Job Aids.

- Figure 12.15.2.1, FIRC Survey/Monitor Job Aid

12.15.2.21. PROCEDURES.

A. Obtain Schedule. Obtain a schedule of FIRCs from the pilot school.

B. Contact Sponsor. The Inspector must contact the pilot school and request a copy of the current, approved TCO. If appropriate, the Inspector should advise the pilot school that he would monitor the course. The Inspector must determine:

- The exact date, time, and location of the course
- The subject matter to be covered and the proposed length of the course
- The name of a person, who represents the pilot school, to contact upon arrival
- How the applications will be received at the GACA Certification and Licensing Division office

C. Attend and Conduct Surveillance of the Flight Instructor Refresher Course (FIRC). The Inspector should:

- 1) Present his Inspector credentials to the pilot school.
- 2) Advise the pilot school that the course is being monitored to ensure adherence with the approved TCO. Request that the sponsor show current GACA approval of the TCO. The GACA must have issued the approval within the past 24 calendar months.

EBOOK VOLUME 12. SURVEILLANCE

- 3) Assume a seat in the classroom area so as not to disrupt the course. When appropriate, ask the instructor for his credentials to determine his qualifications for conducting the course.
- 4) Observe the conduct of the proceedings and the classroom instruction. During the observation, determine whether:
 - a) The instructor follows the TCO.
 - b) The course content is technically accurate.
 - c) The facilities are adequate with respect to seating, lighting, and general comfort.
 - d) The organization sees that attendees adhere to attendance requirements and course procedures.
 - e) The graduation certificate issued is properly numbered and contains the following data:
 - The full name and address of the organization approved to conduct the clinic
 - The full name and address of the graduate
 - The date of issuance
 - The signature of the chief instructor
- 5) Determine whether the course has been satisfactorily or unsatisfactorily conducted. Proceed with the following appropriate steps:
 - a) For satisfactory:
 - Fill out the job aid (Figure 12.15.2.1), noting the satisfactory indication
 - File the job aid in accordance with office procedures
 - b) For unsatisfactory:

EBOOK VOLUME 12. SURVEILLANCE

- Fill out the job aid in detail, noting all unsatisfactory areas
- File job aid in accordance with office procedures
- If the course was unsatisfactory to the point that withdrawal of the pilot school's FIRC approval is recommended, record the deficient areas in detail and notify the Director, Certification and Licensing Division

D. GAR. Complete the GAR.

12.15.2.23. TASK OUTCOMES. Completion of this task results in one of the following:

- Unsatisfactory report to Director, Certification and Licensing Division
- Satisfactory report in the GACA office files

12.15.2.25. FUTURE ACTIVITIES.

- Increased monitoring of future courses conducted by a particular pilot school may be necessary
- Possible withdrawal of the school's approval to teach this course
- Possible revision of the school's TCO

EBOOK VOLUME 12. SURVEILLANCE

[Figure 12.15.2.1 FIRC Survey/Monitor Job Aid]

Name of Pilot School:			
Date and Location of Surveillance:			
Date of Approved TCO:			
Instructors' Names:			
Start Time: Day 1 Planned: Actual:	Day 2 Planned: Actual:	Day 3 Planned: Actual:	
OBSERVATION OF COURSE		SAT	UNSAT
TCO followed:			
Course content technically correct:			
Facilities adequate:			
Seating:			
Lighting:			
General comfort:			
School ensured attendee compliance with course attendance requirements and course procedures:			
Airman certification representative:			
Qualified:			
Issued certificates appropriately:			

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

**CHAPTER 15. MISCELLANEOUS PART 61, 91, 121, 125, 135, 141 AND 145
SURVEILLANCE/INSPECTIONS**

Section 3. Air Ambulance Aircraft Inspections

12.15.3.1. GACA ACTIVITY REPORT (GAR).

- A. 1622 (OP)
- B. 3627 (AW)
- C. 3628 (AW)

12.15.3.3. OBJECTIVE. This section provides guidance for inspecting aircraft used for air ambulance and Rotorcraft Emergency Medical Service (REMS).

12.15.3.5. GENERAL.

A. Aviation Safety Inspector (Inspector) Responsibilities.

1) It is important that the Inspectors become familiar with the type of aircraft to be inspected before performing the inspection.

NOTE: Although the aircraft may appear clean and sanitary, the Inspector should be aware that there may be contaminants aboard. The Inspector should exercise good judgment and use caution to prevent the possibility of contracting an infectious disease.

2) Inspectors must have knowledge of the operator's maintenance procedures and any other items of concern that may surface during routine inspections.

3) This inspection should be performed before the loading or after the unloading of the patient.

NOTE: At all times, the Inspector should be aware that the patient may be in a life-threatening condition.

EBOOK VOLUME 12. SURVEILLANCE

- 4) Any discrepancy should be brought immediately to the attention of the pilot in command (PIC) or appropriate maintenance personnel.

B. Definitions. The follow definitions will apply when conducting an air ambulance inspection.

1) *Air Ambulance.* An aircraft (airplane or rotorcraft) configured for transportation of ambulatory patients or other patients requiring special care including, but not limited to, Basic Life Support (BLS) or Advanced Life Support (ALS). An air ambulance aircraft may, or may not, be permanently equipped with the medical equipment necessary to support these levels of care in flight with trained medical personnel.

2) *Operator.* The person, partnership, company, etc. who has direct responsibility for the operation of the aircraft.

3) *Medical equipment.* Equipment and supplies used in patient care.

4) *Dedicated aircraft.* Aircraft totally configured to air ambulance operations.

NOTE: Dedicated aircraft may be configured for periodic training. Surveillance should be performed on the aircraft's removed equipment and the appropriate maintenance records should reflect this change.

5) *Non-dedicated aircraft.* Aircraft temporarily configured to air ambulance configuration.

6) *Rotorcraft Emergency Medical Service (REMS).* Means a rotorcraft operation involving transport of a person who requires immediate medical attention by a General Authority of Civil Aviation Regulation (GACAR) Part 119 certificate holder authorized by the President to conduct REMS operations.

7) *Scene flight.* Flight to unimproved remote locations, accident sites, or disaster areas for the pick-up of patients in life-threatening situations requiring immediate medical care.

8) *Transport flight.* Transport of a stabilized patient to an improved landing area.

9) *Neonatal flight.* Transport of an infant, generally using Isolettes (incubator), either in scene flights or transport flights.

10) *Pediatric flight.* Transport of young children, either in scene flights or transport

EBOOK VOLUME 12. SURVEILLANCE

flights.

C. Types of Aircraft. Because air ambulance is such a varied field, there are many types of air ambulance aircraft, such as fixed wing or rotorcraft, single or multiengine, reciprocating or turbine-powered, IFR-equipped, etc.

- 1) *Typical Aircraft Configuration.* Typical air ambulance configurations may include the following items:
 - a) Medical oxygen (gaseous and/or liquid). Containers, lines, gauges, regulators, outlets, and other system components.
 - b) Vacuum/air systems. Containers, pumps, regulators, lines, gauges, and outlets.
 - c) Litter systems. Stretchers, mounting bases, pedestals, platforms, and patient restraining devices and shoulder harnesses.
 - d) Supplemental lighting. Spots, floods and emergency.
 - e) Search lights. Controlled by the pilot for night operations.
 - f) Cabin medical supply storage. Bins, compartments, pouches, under seat drawers, nets, and cabinets.
 - g) Cabin mounted medical equipment. Intravenous bags, portable oxygen, racks, and brackets.
 - h) Medical equipment power outlets. 12 and 24 volts direct current, 115 volts alternating current, inverters, converters, and batteries. The Inspector may find an additional external power receptacle, which is dedicated to AC power for the air ambulance equipment.
 - i) Isolettes/balloon pumps. Mounting and securing systems.
 - j) Specialized air ambulance communication equipment. FM radios, sirens, public address systems, intercom systems (ICS), and communication from aircraft to ground and/or emergency personnel.

EBOOK VOLUME 12. SURVEILLANCE

- k) Attendant/medical personnel seats. Forward and aft facing, side facing, bench-type and individual, fold downs, pivoting seats, reversible seats, and lap belts and harnesses.
- 2) *Placards*. Flight manuals and flight manual supplements. There may be other placards required by the alteration data.

NOTE: The GACARs require that all equipment installed, including portable devices, must be appropriately secured. The supporting structure to which the equipment is to be attached must be designed to restrain all loads up to the ultimate inertia specified in the emergency provisions/emergency landing conditions required by the regulations.

12.15.3.7. COORDINATION REQUIREMENTS. This task may require coordination between the operator, the Inspector and the GACA Airworthiness Engineering Section.

12.15.3.9. REFERENCES, FORMS, AND JOB AIDS.

A. References:

- GACAR Part 1, 21, 23, 25, 27, 29, 43, and 145
- Federal Aviation Administration (FAA) Advisory Circular (AC) 20-42 (as amended), Hand Fire Extinguisher For Use in Aircraft.
- AC 21-25 (as amended), Approval of Modified Seats and Berths.
- AC 91-42 (as amended), Hazards of Rotating Propellers and Helicopter Rotor Blades.
- AC 135-5 (as amended), Maintenance Program Approval for Carry-On Oxygen Equipment for Medical Purposes.
- AC 135-14 (as amended), Emergency Medical Services/Helicopter (EMS/H).
- AC 135-15 (as amended), Emergency Medical Services/Airplane (EMS/A).

B. Forms. GACA Activity Report (GAR).

C. Job Aids.

EBOOK VOLUME 12. SURVEILLANCE

- Figure 12.2.1.2, Interior Inspection Guidelines (Volume 12, Chapter 2, Section 1)
- Figure 12.2.1.3, Exterior Inspection Guidelines (Volume 12, Chapter 2, Section 1)

12.15.3.11. PROCEDURES.

A. Initiate air ambulance ramp inspection in accordance with the General Authority of Civil Aviation (GACA) surveillance program.

B. Prepare For the Inspection.

- 1) Select an aircraft to be inspected that will be available for the scheduled inspection.
- 2) Determine if any recent problem areas have been identified for that type of aircraft, such as:
 - Emergency Airworthiness Directives (AD)
 - Maintenance and Airworthiness Bulletins
- 3) Determine if recent regulatory changes and AD requirements affect the aircraft to be inspected.

C. Introductions. Introduce yourself to the PIC and/or appropriate maintenance personnel. Describe the purpose and scope of the inspection.

NOTE: Perform the inspection before the loading or after the unloading of the patient.

D. Conduct the Exterior Inspection (as applicable). Perform this inspection in accordance with Volume 12, Chapter 2, Section 1, Figure 12.2.1. The following items may be found specifically in air ambulance rotorcraft:

- External lighting
- External oxygen storage containers and servicing points
- External public address components

EBOOK VOLUME 12. SURVEILLANCE

E. Perform Interior Inspection (as applicable). Perform this inspection in accordance with in Volume 12, Chapter 2, Section 1, Figure 12.2.1.2, Place added emphasis on the following items, when applicable:

- Medical oxygen (gaseous and/or liquid)
- Vacuum/air systems
- Litter systems
- Supplemental lighting
- Cabin medical supply storage
- Cabin mounted medical equipment
- Medical equipment power outlets
- Isolettes (incubators)/balloon pumps
- Specialized air ambulance communication equipment
- Attendant/medical personnel seats
- Placards

NOTE: Do not disturb or rearrange medical equipment or supplies. If such equipment blocks interior areas whose access is necessary to conduct interior inspection, request assistance from the operator's assigned staff.

NOTE: GACARs require that all equipment installed, including portable devices, must be appropriately secured. The supporting structure to which the equipment is to be attached must be designed to restrain all loads up to the ultimate inertia specified in the emergency provisions/emergency landing conditions required by the appropriate regulations.

F. Examine the Flight/Maintenance Record Entries.

- 1) Ensure that all open discrepancies from the previous flight are resolved, per the

EBOOK VOLUME 12. SURVEILLANCE

operator's manual, prior to departure of the aircraft.

- 2) Review the flight/maintenance records to determine if repetitive maintenance problems exist that might indicate a trend.
- 3) Ensure that all Minimum Equipment List (MEL), items are deferred in accordance with the provisions of the operator's approved MEL.
 - a) Review the operator's approved MEL to determine if the conditions, procedures, and placarding requirements were accomplished to correctly defer specific items.
 - b) Note the date when the item was first deferred to determine if the max allowed length of deferral was exceeded. This can be accomplished by examining the flight maintenance records, deferred maintenance list, deferred maintenance placards, or stickers.
- 4) Ensure that an airworthiness release, flight/maintenance record entry, or appropriate approval for return to service has been made after the completion of maintenance.
- 5) Ensure, when available, that the maintenance records contain, for each discrepancy, the following information:
 - A description of the work performed or reference to acceptable data
 - Name or other positive identification of person approving the work
 - Name of person performing work if outside the organization
- 6) Ensure that all modifications to the aircraft have been properly documented and accomplished in accordance with approved data. Ensure that any required flight manual supplements are available to the flight crew.

G. Debrief the Operator. Inform the pilot in command and/or appropriate maintenance personnel that the inspection has been completed. Discuss the discrepancies that were found during the inspection.

H. Examine the Maintenance Record Entries. Ensure that the operator has recorded all discrepancies noted during this inspection. If time is available, monitor the operator's corrective actions.

EBOOK VOLUME 12. SURVEILLANCE

I. Analyze Findings. Analyze each finding to determine if the discrepancies are the result of improper maintenance and/or inadequate maintenance/inspection procedures.

12.15.3.13. TASK OUTCOMES.

A. GAR. Complete the GAR.

B. Task Completion. Completion of this task may result in one of the following:

- Satisfactory inspection
- Requirement for a follow-up inspection for a particular discrepancy
- Submit a report of any deficiencies to the Director, Airworthiness Division and/or Director, Flight Operations Division
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

C. Task Documentation. File all supporting paperwork in the GACA office file.

12.15.3.15. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, or other job tasks are warranted.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 15. MISCELLANEOUS PART 61, 91, 121, 125, 135, 141 AND 145 SURVEILLANCE/INSPECTIONS

Section 4. Observing Air Operators from Air Traffic Service (ATS) Facilities

12.15.4.1. GACA ACTIVITY REPORT (GAR).

A. 1845 (OP)

12.15.4.3. OBJECTIVE. Aviation Safety Inspectors (Inspectors) (Operations) may observe the operations of an air operator from an Air Traffic Service (ATS) facility. The purpose of these observations is to ensure that operators comply with ATS procedures.

12.15.4.5. GENERAL. The workload in air traffic control facilities is especially demanding during instrument meteorological conditions (IMC) and peak operational periods. Inspectors should be careful to avoid distracting controllers from the performance of their duties.

A. Coordination. The Inspector should contact the air traffic facility to coordinate the observation.

B. Observation. Inspectors are encouraged to observe operations during IMC and during peak operating periods. Inspectors should observe and note the following performance elements:

- Aircraft and ground vehicle compliance with ground operating procedures
- Pilot adherence to approach and departure procedures, ATS instructions, and weather minimums
- Reasons for any missed approaches
- Effectiveness of aerodrome visual aids: lights, signs and markings for ramps, taxiways, and runways
- Effectiveness and dissemination of weather reports
- Effectiveness of reports on the conditions affecting aerodrome operations

EBOOK VOLUME 12. SURVEILLANCE

- Problems observed by ATS personnel

12.15.4.7. TASK OUTCOME.

A. GAR. Complete the GAR.

B. Task Completion. Completion of this task may result in one of the following:

- Satisfactory inspection
- Communicate concerns/findings to the Director, Flight Operations Division and/or Director/Manager, Air Navigation Services (ANS) Safety Division
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

12.15.4.9. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, or other job tasks are warranted.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 15. MISCELLANEOUS PART 61, 91, 121, 125, 135, 141 AND 145 SURVEILLANCE/INSPECTIONS

Section 5. Problematic Use of Psychoactive Substances by Flight Crew Members

12.15.5.1. PURPOSE. This section provides procedures for aviation safety inspectors (Inspectors) in the handling and processing of situations where there is evidence or suspicion of the problematic use of psychoactive substances by flight crew members. It also provides guidance regarding the refusal by a flight crew member to submit to testing.

12.15.5.3. DISCUSSION. General Authority of Civil Aviation (GACA) Inspectors must use all available resources to prevent any person from acting, or attempting to act, as a crew member while that person is under the influence of psychoactive substances. This applies to crew members employed by air operators and those conducting general aviation operations. General Authority of Civil Aviation Regulations (GACAR) § 91.21 prohibits any person to act or attempt to act as a crew member of a civil aircraft while under the influence of any psychoactive substance, by reason of which human performance is impaired. In addition, no such person will engage in any kind of problematic use of psychoactive substances.

12.15.5. REGULATORY REFERENCES. Per GACAR §§ 61.11, and 91.21, the following guidance applies:

A. Inspectors are not authorized to require a crew member to submit to a psychoactive substance test. The GACA may only obtain such test by advising management personnel of crew members employed by air operators (see below for more guidance) and/or by asking the local law enforcement officers to request the test.

B. GACA is responsible for conducting the investigation of any airman who has a positive psychoactive substance test or a refusal to submit to testing on a test administered by law enforcement personnel.

C. If a crew member operating under General Authority of Civil Aviation (GACAR) Part 121 or 135 appears to have signs and symptoms of probable psychoactive substance use, the Inspector should contact the operator employing the crew member and advise its supervisory personnel that action by the operator may be warranted under the appropriate provisions of the GACARs,

EBOOK VOLUME 12. SURVEILLANCE

reasonable cause/suspicion testing. The operator's supervisory personnel trained in the detection of reasonable cause/suspicion determinations must follow the regulatory requirements in making the reasonable cause/suspicion determination. If the determination to conduct testing is made, the flight crew member is required to submit to testing under the regulations. The GACA, Aviation Medicine Division, has the oversight responsibility regarding the GACA-mandated psychoactive substance testing programs, to include responding to questions, inspection of aviation companies and investigations. The GACA, Aviation Medicine Division is also responsible for the investigation of an airman holding a medical certificate issued under GACAR Part 67 and has a positive psychoactive substance result or a refusal to submit to testing administered under the GACAR regulations. If GACA becomes aware of a positive psychoactive substance result or a refusal to submit to testing, conducted under the operator's GACA-mandated testing program or law enforcement test, that information should be directed to the GACA, Aviation Medicine Division.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 15. MISCELLANEOUS PART 61, 91, 121, 125, 135, 141 AND 145 SURVEILLANCE/INSPECTIONS

Section 6. Transportation of Oxygen Generators (Chemical) for Parts 121, 125, 135 and 145

12.15.6.1. GENERAL. This section contains information for aviation safety inspectors (Inspectors), and provides guidance concerning the prohibition of transporting chemical oxygen generators as cargo in passenger carrying aircraft.

12.15.6.3. BACKGROUND.

A. By definition, oxygen generators (chemical) are any device containing chemicals that upon activation release oxygen as a product of chemical reaction. Chemical oxygen generators, when not in their protective thermal canisters (normal installation), and packaged in any quantity in a confined area, are hazardous if activated.

B. The carriage of an oxygen generator (chemical) as cargo on a passenger-carrying aircraft is prohibited under GACAR Part 109. This prohibition does not apply to the carriage of chemical oxygen generators for medical use of a passenger, provided that units for passenger use meet applicable regulatory requirements. Importantly, the carriage of Passenger Service Units (PSU) and seats that incorporate PSUs must have the oxygen generator removed before transporting, even though the complete seat assembly contains the oxygen generator protective fire shield. This prohibition does not apply to cargo operations provided they are approved for and are in compliance with all regulatory requirements pertaining to the transportation of dangerous goods by air in accordance with GACAR Part 109.

NOTE: Chemical oxygen generators may be transported on cargo-only aircraft, if they are properly packaged, marked with the proper shipping name, labeled in accordance with the manufacturer's instructions, and accompanied by shipping papers as prescribed under GACAR Part 109.

C. In order to prevent the possibility that an oxygen generator may cause or contribute to an accident, Aviation Safety Inspectors (Inspectors) and GACAR Part 121, 125, 135 and 145 operators/certificate holders must familiarize themselves with the proper handling of chemical oxygen generators.

EBOOK VOLUME 12. SURVEILLANCE

12.15.6.5. PROCEDURES. During normal surveillance of operators and certificate holders, Inspectors should place special emphasis on the methods they use to avoid transporting chemical oxygen generators and other prohibited dangerous goods on passenger carrying aircraft.

12.15.6.7. TASK OUTCOME.

A. Complete the applicable GAR.

B. Completion of this task can result in the following:

- Satisfactory inspection
- Communicate concerns/findings to the Director, Flight Operations Division
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

12.15.6.9. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement or other job tasks are warranted.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

**CHAPTER 15. MISCELLANEOUS PART 61, 91, 121, 125, 135, 141 AND 145
SURVEILLANCE/INSPECTIONS**

Section 7. Inspect Communications Stations

12.15.7.1. GACA ACTIVITY REPORT (GAR).

A. 1845 (OP)

12.15.7.3. OBJECTIVE. This section provides guidance for inspecting an operator's ground communications station as used for dispatch and/or flight following purposes.

12.15.7.5. GENERAL. The inspection of an operator's ground communication stations ensures that the capabilities and reliability of the facilities continue to meet minimum requirements established by the General Authority of Civil Aviation Regulations (GACARs). The inspection also ensures that the stations continue to meet the standards demonstrated by the operator during the en route approval proving flights. In most cases, communications facilities may be satisfactorily assessed by en-route inspections and/or inspections of dispatch/release centers.

12.15.7.7. PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. Knowledge of the operator's communications requirements.

B. Coordination. This task requires coordination between the Inspectors (Operations), operator dispatch and/or flight following personnel and operator avionics personnel.

12.15.7.9. REFERENCES, FORMS, AND JOB AIDS.

A. References. GACAR Part 121, 125 and 135.

B. Forms. GAR.

C. Job Aids. None.

12.15.7.11. PROCEDURES.

EBOOK VOLUME 12. SURVEILLANCE

A. Evaluate the Operator's Suspected Communications Problems .

- 1) Discuss with the operator the nature of the deficiency.
- 2) Accomplish the following, as required:
 - Review procedures, equipment records, and historical records, as available
 - Conduct a physical inspection of the communications facilities
 - Conduct flight and/or ground evaluations
- 3) Review any communications records (GACAR § 121.1529)
- 4) Analyze the results of the investigation. Ensure that any deficiencies found are resolved.

B. Evaluate a New System.

- 1) Discuss the requirements for the new system with the operator.
- 2) Accomplish the following, as required:
 - Examine the compatibility of the new system with the operator's dispatch and flight following capabilities
 - Conduct a physical inspection of the new system/facility
 - Conduct flight and/or ground evaluations
- 3) Analyze the results of the evaluation. Ensure that the new system/facility complies with the appropriate regulations.

12.15.7.13. TASK OUTCOMES.

A. GAR. Complete the GAR.

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

EBOOK VOLUME 12. SURVEILLANCE

- A narrative report outlining the source of the request for the inspection, the problem investigated, the findings, and any recommendations
- Filing of the original report at the GACA office
- Coordination with the operator for revisions of the operator's operations specifications, as appropriate

12.15.7.15. FUTURE ACTIVITIES. Normal surveillance.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 15. MISCELLANEOUS PART 61, 91, 121, 125, 135, 141 AND 145 SURVEILLANCE/INSPECTIONS

Section 8. Special Aviation Event Surveillance (Operations)

12.15.8.1. GACA ACTIVITY REPORT (GAR).

- A. 1685 (OP) (Air Races)
- B. 1686 (OP) (Aerobatic Air Show)
- C. 1696 (OP) (Parachute Jumps)
- D. 1697 (OP) (Balloon Events)
- E. 1698 (OP) (Aerobatic Competitions)

12.15.8.3. OBJECTIVE. The objective of this task is to determine whether the holder of a Certificate of Waiver or Certificate of Authorization for a special aviation event is in compliance with the terms set forth in the waiver or authorization. Successful completion of this task results in the continuation or cancellation of an existing waiver or authorization.

12.15.8.5. GENERAL.

A. Surveillance Policy. Air shows, fly-ins, and other gatherings of general aviation aircraft and airmen are opportunities for the aviation safety inspector (Inspector) to present a positive image to the aviation community and the general public. Many of the aircraft operators attending these special aviation events are regular users of air traffic and flight service facilities, but their contact with General Authority of Civil Aviation (GACA) personnel may have been rare.

- 1) Inspectors are encouraged to establish early contact with sponsors and organizers of aviation events so activities can be planned to serve attendees.
- 2) Under no circumstances should these gatherings be targeted for a blanket sweep inspection of spectator airmen and aircraft.

EBOOK VOLUME 12. SURVEILLANCE

- 3) The scope of surveillance conducted on aviation event performers and their aircraft will be determined by the Director, Flight Operations Division.
- 4) Inspectors assigned work functions at aviation events should strive to earn the confidence of the attending and participating airmen. This can be accomplished by displaying expert technical knowledge as an aviation safety professional.
- 5) The guidance in this section does not preclude Inspectors from taking appropriate action to resolve situations they observe that require immediate corrective action.

B. Special Aviation Event Surveillance. This section provides the surveillance procedures for evaluating a special aviation event.

- 1) The procedures ensure that current programs, with an emphasis on safety, systems, and intended methods of compliance, are thoroughly reviewed, evaluated, and tested.
- 2) The surveillance steps encompass all types of aviation events. Portions can be eliminated when they are not applicable; for example, inspection of a balloon competition site is not required when no balloon events are scheduled at an air show location.

C. Issuance of Waiver or Authorization. Review, approve and issue the Certificate of Waiver and/or Certificate of Authorization, as applicable (see Volume 4, Chapter 2, Section 2, Waivers and Authorizations) prior to the special aviation event.

D. Compliance with Waiver or Authorization. The performers and the holder of the Certificate of Waiver or Certificate of Authorization are responsible for compliance with the terms of the waiver or authorization.

E. Weather Considerations. Often because of deteriorating weather conditions, participants cannot perform their normal routine. The Inspector should cooperate with team leaders when they have to make alterations to their acts. Before canceling an act, the Inspector should explain the reasons to the person in charge of the air show. Rather than canceling an entire act, it might be possible to eliminate certain maneuvers and still allow the demonstration in a modified form. The final decision to conduct a modified act is the responsibility of the performer. Performers must not feel pressured to conduct an act if they are not completely sure it can be performed safely.

EBOOK VOLUME 12. SURVEILLANCE

12.15.8.7. AVIATION SAFETY INSPECTOR RESPONSIBILITIES. The Inspector-in-Charge (IIC), or other Inspectors assisting the IIC, is not responsible for the management, control, or direction of the aviation event. Other Inspectors may be assigned to assist in the surveillance; however, all coordination and communication with the waiver or authorization holder should be through the IIC, the Inspector who is primarily responsible for the surveillance.

A. Surveillance Responsibilities. The Inspector's responsibility is to provide adequate safety oversight of the aviation event and to ensure compliance with the provisions of the waiver or authorization. The Inspector is also "on-hand" to provide guidance concerning the waiver or authorization's general and special provisions. Aviation events normally operate on very tight schedules; therefore, the Inspector should not interrupt an event except to address safety-related issues requiring immediate attention.

B. Inspector Authority. Although authority is not limited to the following, generally, the Inspector has the authority to:

- Change the effective time and date of the waiver or authorization after proper coordination with the appropriate air traffic services facilities
- Add performers to the schedule of events if all terms of the waiver or authorization can be met
- Change the ceiling, visibility, and wind limitations contained in the special provisions, provided there is no adverse effect on safety
- Cancel or delay any or all acts if it is deemed necessary in the interest of safety

12.15.8.9. PRESHOW BRIEFING. Waiver and/or authorizations for aerial demonstrations must include the requirement for a preshow briefing of all performers.

A. Briefing Content. It is imperative that the briefing cover every aspect of the event. Volume 11, Chapter 2, Section 1, Figure 11.2.1.29, Preshow Briefing Guide contains a general briefing outline.

B. Role of IIC. The IIC is not responsible for conducting the briefing, but he must be available at the briefing for any questions concerning the Certificate of Waiver or Certificate of Authorization and its provisions.

EBOOK VOLUME 12. SURVEILLANCE

C. Non-Aerodrome Sites. If the event is to be conducted at a non-aerodrome location, special procedures for the briefing of the performers must be established.

12.15.8.11. AEROBATIC COMPETENCY. In order for any pilot (other than pilots of military aircraft or operators of ultralight vehicles) to perform aerobatic maneuvers at special aviation events, the pilot must have in his possession a valid Statement of Acrobatic Competency (Figure 12.15.8.1). See Volume 9, Chapter 6, Section 1, Issue/Renew/Rescind a Statement of Acrobatic Competency for additional guidance.

A. Issue Date. The Statement of Acrobatic Competency (SAC) must have been issued in accordance with GACA policies and procedures. This authority is no longer valid after the expiration date annotated on the SAC.

B. Aerobic Contests, Air Races, and Aerobatic Practice Areas. Pilots who are competing in an aerobatic contest (not associated with an air show), flying in an air race, or practicing in a prescribed aerobatic practice area (authorized by a Certificate of Waiver for that specific purpose) are not required to have a Statement of Acrobatic Competency.

12.15.8.13. OBSERVANCE OF AIR SHOWS, AIR RACES AND AEROBATIC CONTESTS.

A. Surveillance Team. At least one qualified Inspector (Operations) should be assigned to observe each air show and air race. Inspectors (Airworthiness) or other Inspectors (Operations) may be assigned as part of a team depending upon the size and complexity of the event. The IIC may also be responsible for providing on-the-job training (OJT) in aviation event surveillance to another Inspector.

B. Control Point. Experienced, successful sponsors have learned the value of establishing a control point where the sponsor or a designated representative, i.e., show manager, can control the event. Before the event, a control point site should be established, and the Inspector should be familiar with the location of the control point. Since the control point is an ideal location for conducting a portion of the surveillance, the Inspector shall be allowed full, easy access to and from the control point.

C. Showline Surveillance. If Inspector resources allow, an Inspector other than the IIC could monitor the adherence to showline restrictions by observing the showline(s) from a vantage point that will permit observation down the showline and that is well off the end of the showline toward the end of the aerobatic maneuver area. If this type of surveillance is to be

EBOOK VOLUME 12. SURVEILLANCE

conducted, performers should be advised in the preshow briefing.

D. Sponsor Responsibilities. The sponsor's responsibilities include, but are not limited to:

- Assuring the event sponsor and participants comply with all terms and limitations of the waiver and/or authorization
- Familiarity with the waiver and/or authorization, as well as being aware of other individuals assigned the responsibilities of crowd control, emergency facilities, transient aircraft lookouts, etc.
- In the event the crowd gets out of control, discontinuing the aerial demonstrations until control is regained
- If unauthorized transient aircraft enter the local area, advising pilots performing aerial demonstrations to discontinue their routines until the transient aircraft is clear
- If spectators inadvertently enter unauthorized areas, stopping operations until the spectators are under control

E. Effect of Weather on Aviation Events. To preclude cloud penetration during an aerial demonstration, it is important to point out that, in the interest of safety, certain sections of the regulations should not be waived for an air show.

- 1) General Authority of Civil Aviation Regulation (GACAR) § 91.165, prescribes the minimum visibility and distances from clouds necessary to maintain basic visual flight rules (VFR) conditions.
- 2) GACAR § 91.183 requires an instrument flight rules (IFR) flight plan and an appropriate air traffic control (ATC) clearance in order to operate under IFR.
- 3) Even though the above rules may be waived under GACAR § 91.611, GACA is concerned about an aerobatic operation that would first penetrate a cloud layer (perhaps vertically) and come in proximity to another aircraft operating over-the-top, then descend back through the clouds without visual reference to the showline.

12.15.8.15. OBSERVANCE OF PARACHUTE JUMPS.

EBOOK VOLUME 12. SURVEILLANCE

A. Location of Surveillance. The Inspector has a choice of conducting the parachute demonstration jump surveillance at either the aerodrome from which the aircraft departs, the landing area, or both, if they are in proximity. This applies only to those events where the parachute demonstration jump is the only event.

B. Aircraft Used in Parachute Operations. Aircraft engaged in sport parachuting operations must be operated in accordance with the rules prescribed in GACAR Part 91.

- 1) Many aircraft involved in parachute jumping operations have been modified to accommodate the jumpers. These modifications may involve safety belt attachments and arrangements, attachments to the structure, emergency exits, or the removal of the exit door. All of these alterations must be GACA approved. Further guidance on aircraft involved in sport parachuting operations is found in Volume 12, Chapter 5, Section 5.
- 2) Changes in the configuration of the aircraft must be reflected in the mass and balance documents.

C. Special Considerations.

- 1) Inspector contact with skydiving activities is generally limited to monitoring aviation events where skydiving is involved, issuing authorizations for jumps into congested areas, and, when requested by air traffic services (ATS), providing input as to the safety of jumps into controlled airspace.
- 2) It is important for Inspectors to ensure that the actual jump reflects what has been authorized. Past accidents have brought to light incidents where events not enumerated in the authorization were a part of an approved jump. Because an authorization had been issued, tacit regulatory approval was implied for areas that were not actually authorized.
- 3) Further, there is concern that some of the skydiving activities that are taking place involve the operation of aircraft in a manner not provided for in the aircraft type certification and with no evaluation of the possible ramifications.
- 4) Since the regulations involving aircraft modification are generally handled as airworthiness functions and the majority of contacts with the skydiving community are made by Inspectors (Operations), an Inspector (Airworthiness) should be involved where the proposed operations appear questionable.

EBOOK VOLUME 12. SURVEILLANCE

5) Inspectors, when conducting surveillance of an aviation event involving skydiving, should review the regulatory requirements and authorizations associated with skydiving activities, including the following:

- Aircraft modifications necessary to accommodate skydiving
- Proper documentation of these modifications
- Determination of approved number of occupants of a given model by type certificate (TC) or supplemental type certificate (STC)
- Safety belts and emergency exits
- Aircraft loading and mass and balance requirements

12.15.8.17. ALTIMETER SETTINGS.

A. “Zero” Altitude Reference. Pilots performing aerobatics generally set the aircraft’s altimeter to zero before takeoff. This eliminates the need for the pilot to account for terrain altitude in determining the aircraft’s height above the ground.

B. Altimeter Setting. GACAR § 91.71 is designed to provide a standard altitude reference for the purpose of maintaining a flight level or cruising altitude. Since aerobatic routines normally do not involve maintaining a flight level or a cruising altitude, operational safety is not compromised if local aerobatic flight is conducted under visual flight rules (VFR) using other than the altimeter references specified by GACAR § 91.71. However, the aircraft must depart from and land at the same aerodrome. Local aerobatic flights should not be required to comply with the altimeter setting requirements for aircraft maintaining “flight levels” or “cruising altitudes” as per GACAR § 91.71.

12.15.8.19. SAUDI ARABIAN REGISTERED CIVIL AIRCRAFT.

A. Air Show Performance. To perform in an air show, a Saudi Arabian-registered civil aircraft must hold an appropriate airworthiness certificate issued by the GACA, be maintained in accordance with GACAR Part 43, and 91, as required, and meet original type design or an approved altered condition that is safe for flight.

- 1) It is incumbent upon aircraft owners and operators who conduct aerobatic flight

EBOOK VOLUME 12. SURVEILLANCE

operations to be knowledgeable about the certification basis of their aircraft, and how the certification basis defines which flight operations are authorized. In some cases, this aircraft-specific information may only be available from the aircraft manufacturer. Aircraft-type clubs and related organizations may be another source of this information, but their level of expertise may vary.

B. Airplanes.

- 1) For the purpose of issuing a Certificate of Waiver or Certificate of Authorization for an air show, the following aircraft attitudes will be considered aerobatic flight:
 - a) For civil turbojet/turbofan powered (primary power unit) airplanes, when the pitch angle exceeds a positive or negative 60° angle from the horizon, and/or when the bank angle diverges from level flight in excess of 60°.
 - b) For all other aircraft, when the pitch angle exceeds a positive or negative 90° angle from the horizon, and/or when the bank diverges from level flight in excess of 90°.
 - c) It is incumbent upon the owner/operator of the airplane to determine the ability of the airplane to safely perform any intended flight operation, to ensure the flight operation is conducted in accordance with any operating limitations described in the aircraft flight manual (AFM), and in accordance with any operating limitations issued by the GACA as part of the airworthiness certificate.
- 2) Experimental Certificates are issued for certain purposes as described in GACAR § 21.173.
 - a) To perform at air shows, an experimental certificate should be issued for the purpose of exhibition.
 - b) To participate in closed course air racing, an experimental certificate should be issued for the purpose of air racing.

C. Gliders.

- 1) For the purpose of issuing a Certificate of Waiver or Certificate of Authorization for an air show, any inverted flight maneuver or pitch and/or bank angle greater than 90° conducted

EBOOK VOLUME 12. SURVEILLANCE

by a civil glider is considered aerobatic flight and must be addressed in the Certificate of Waiver or Certificate of Authorization with appropriate special provisions.

2) In accordance with GACAR § 21.41(b), for special classes of aircraft for which airworthiness standards have not been issued in GACAR, the applicable TC requirements will be other airworthiness criteria as the GACA may find applicable to provide an equivalent level of safety.

D. Small Agricultural Airplanes.

1) For the purpose of issuing a Certificate of Waiver or Certificate of Authorization for an air show, any inverted flight maneuver or pitch and/or bank angle greater than 90° conducted by an agricultural aircraft is considered aerobatic flight and must be addressed in the Certificate of Waiver or Certificate of Authorization with appropriate special provisions.

2) In accordance with GACAR §§ 21.35 and 21.37, small agricultural airplanes are subject to the same TC requirements as a Part 23 Normal Category airplane, except for those requirements that are found to be inappropriate for the special purpose operation. As an example, spin testing may not be required for certification of a small agricultural airplane.

a) Additionally, no small agricultural airplane with a special airworthiness certificate issued in the Restricted Category is authorized to conduct inverted flight. Therefore, small agricultural airplane operators who perform inverted flight or spin maneuvers shall ensure that the aircraft has a valid experimental certificate for the purpose of exhibition or an appropriate STC.

b) Additionally, any flight maneuver that exceeds the flight envelope demonstrated during TC flight testing may require the issuance of an experimental certificate or the issuance of an STC in accordance with GACAR Part 21.

c) If these flight envelope limitations are not available in the AFM or type certification data sheet (TCDS), information on these maneuver limitations can be obtained from the aircraft manufacturer.

E. Rotorcraft. The following guidance is applicable to rotorcraft (including gyroplanes).

1) For the purpose of issuing a Certificate of Waiver or Certificate of Authorization for an air

EBOOK VOLUME 12. SURVEILLANCE

show, any inverted flight maneuver or pitch and/or bank angle greater than 90° conducted by a rotorcraft is considered aerobatic flight and must be addressed in the Certificate of Waiver or Certificate of Authorization with appropriate special provisions.

- a) Agility maneuvers (less than 90° of pitch and/or bank) performed by rotorcraft at air shows also require consideration in the Certificate of Waiver or Certificate of Authorization.
 - b) Any civil rotorcraft act that includes a rotorcraft external-load must be operating under GACAR Part 133.
- 2) No civil rotorcraft with a standard airworthiness certificate is authorized to conduct inverted flight. Therefore, rotorcraft operators who perform inverted flight maneuvers shall ensure that the aircraft has a valid Experimental Certificate for the purpose of exhibition or an appropriate STC.
- a) To conduct any flight maneuver that exceeds the flight envelope demonstrated during TC flight testing may require the issuance of an Experimental Certificate or the issuance of an STC in accordance with GACAR Part 21.
 - b) Some rotorcraft may have an AFM that prescribes limitations on aircraft attitude. If these limitations are not available in the AFM or TCDS, information on these maneuver limitations can be obtained from the aircraft manufacturer.

F. Foreign-Registered Civil Aircraft.

- 1) For the purpose of issuing a Certificate of Waiver or Certificate of Authorization for an air show, any inverted flight maneuver or pitch and/or bank angle greater than 90°, 60° for jet powered airplanes, conducted by a foreign registered aircraft is considered aerobatic flight and must be addressed in the Certificate of Waiver or Certificate of Authorization with appropriate special provisions.
- 2) In accordance with the Convention on International Civil Aviation and GACAR § 91.301(a)(1), no person may operate a civil aircraft of foreign registry unless it contains current certificates of registry and airworthiness (standard) issued or rendered valid by the country of registry, or a special flight authorization issued in accordance with GACAR § 91.479.

EBOOK VOLUME 12. SURVEILLANCE

G. Military Aircraft. The airworthiness standards and operating limitations for both KSA and foreign military aircraft are determined by the appropriate military command in the country of origin and generally are not subject to review by civil aviation authorities.

H. Ultralight Vehicles.

- 1) For the purpose of issuing a Certificate of Waiver or Certificate of Authorization for an air show, any inverted flight maneuver or pitch and/or bank angle greater than 90° conducted by an ultralight vehicle that meets the applicability section of GACAR § 103.1 is considered aerobatic flight and be should addressed in the Certificate of Waiver or Certificate of Authorization with appropriate special provisions.
- 2) In accordance with GACA policy, the operator of the vehicle should provide the GACA with a statement of determination that the vehicle and operator are able to conduct the proposed demonstration without creating a hazard to persons and property on the surface. This statement should contain a summary of how the determination was made.

12.15.8.21. PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. This task requires knowledge of regulatory requirements in GACAR Part 45, 91, 103, 105 and GACA policies and qualification as an Inspector.

- 1) The Inspector-in-charge (IIC) of surveillance should have completed OJT and participated in the issuance of a Certificate of Waiver or Certificate of Authorization and the surveillance of several aviation events.
- 2) For aviation events where a military jet aerobatic demonstration team will perform, the Inspector should have satisfactorily completed OJT in the issuance of the waiver or authorization (including the site feasibility study and the preseason evaluation meeting) and surveillance of an air show in which military jet aerobatic teams perform.

B. Coordination. This task requires coordination with Inspectors from the Airworthiness Division and possible with Inspectors from the Aerodrome Safety and ANS Safety Divisions.

12.15.8.23. REFERENCES, FORMS, AND JOB AIDS.

A. References.

EBOOK VOLUME 12. SURVEILLANCE

- GACAR Part 1, 61, 91, 103, 105
- Volume 4, Chapter 2, Section 2, Waivers and Authorizations
- Volume 11, Chapter 2, Section 1, Issue a Certificate of Waiver or Authorization for a Special Aviation Event
- FAA AC 103-7 (as amended), The Ultralight Vehicle.
- FAA AC 105-2 (as amended), Sport Parachute Jumping.

B. Forms.

- Certificate of Waiver
- Certificate of Authorization
- GACA Activity Report (GAR)

C. Job Aids.

EBOOK VOLUME 12. SURVEILLANCE

- Figure 12.15.8.1, Statement of Aerobatic Competency

12.15.8.25. PROCEDURES.

A. Inspector in Charge (IIC) Pre-Surveillance Activities.

- 1) *Review.* Become familiar with the general and special provisions of an aviation event, the Schedule of Events (as applicable), and the regulations that are being waived.
- 2) Assemble at least the following information to bring along on surveillance:
 - Certificate of Authorization and any Certificates of Waiver issued for this aviation event
 - Information and documents for accident or incident investigation
 - Appropriate sections of the regulations
 - Any other equipment or information considered necessary
- 3) Determine the equipment required to conduct the surveillance; for example, VHF radio, FM radio, camera, etc.
- 4) If a GACA team is assigned for surveillance, brief each Inspector on his duties and responsibilities. Emphasize that all contacts with the sponsor, problems with performers, etc., must be coordinated with the IIC.
- 5) No sooner than 48 hours before the event, contact the appropriate facility to ensure that a NOTAM, if required by the Certificate of Waiver or Certificate of Authorization, has been issued.

B. GAR. Open the GAR.

C. GACA Introduction. At the site of the aviation event, introduce all members of the GACA team to the holder of the event, his representatives, and other key personnel.

D. Preshow Briefing. Attend and observe (all GACA surveillance personnel) the preshow briefing (see Volume 11, Chapter 2, Figure 11.2.1.29). If performers list credentials and aircraft

EBOOK VOLUME 12. SURVEILLANCE

information on a sign-in sheet, spot-check a sampling for accuracy, as required. Obtain the original copy of the sign-in sheet for the file.

E. Inspect Airman Certificates. As a minimum, ensure that the participating pilots have in their possession:

- A valid pilot certificate, except operators of ultralight vehicles
- If required, a valid letter of authorization in lieu of type rating
- A current medical certificate, except operators of ultralight vehicles
- A current Statement of Acrobatic Competency, as required (see Figure 12.15.8.1).
- A valid letter of authorization to conduct maneuvers at the crowd, if required

F. Parachutist Qualifications. If last minute substitutions are made to the list of qualified parachutists provided in the application for the authorization, check the parachutists' qualifications.

G. Inspect Participating Aircraft. Inspect the following:

- The aircraft's general condition
- The aircraft airworthiness and registration certificates
- The operating limitations associated with any Special Airworthiness Certificates
- The Operating Certificate for large aircraft used in sport parachuting
- The modifications to aircraft that accommodate sport parachutists and documentation of approval by the GACA

H. Reserved.

I. Balloon Competitions.

- 1) Determine that the designated spectator area for balloon events is maintained at a

EBOOK VOLUME 12. SURVEILLANCE

minimum of a 60-meter radius away from the designated or declared goal or target.

- 2) Ensure that the sponsor can keep the target area clear of all except designated event personnel.
- 3) Ensure all required participants attend pre-event briefing.

J. Ensure Compliance with Terms of Waiver or Authorization. Inspect the event site for compliance with the special provisions of the waiver or authorization.

- 1) Include, but do not limit the inspection to: the showline, physical barriers, policing of the spectator area(s), and areas where any aircraft operate.
- 2) Inspect the control point.
- 3) Ensure communications capability with participating aircraft, security, emergency equipment, and a public address system for spectators. Also ensure that Inspectors have continuous access to the control point.
- 4) If a discrepancy is noted, immediately bring it to the attention of the holder of the Certificate of Waiver or authorization or their designated representative.

K. Observe Aviation Event. Ensure that all provisions of the waiver or authorization and special provisions are adhered to in all cases.

- 1) If a minor problem is noted, discuss the problem with the appropriate individual during the debriefing. For example:
 - a) Personnel for policing were inadequate to keep spectators from intruding too close to the showline. Spectators were immediately escorted from the area, and more security personnel were assigned to the area.
 - b) Insufficient time between performances.
- 2) If you observe an incident that is in noncompliance with the terms of the waiver or authorization or the regulations, advise the waiver or authorization holder and, if necessary, the performer of the actions necessary to regain compliance. For example:

EBOOK VOLUME 12. SURVEILLANCE

- Performing aerobatics inside the showline
 - Performing maneuvers not provided for in the waiver or authorization
- 3) If a serious safety problem is noted, immediately bring it to the attention of the holder of the Certificate of Waiver or Certificate of Authorization or a designated representative.
- a) Observe actions taken by the holder of the waiver or the representative to correct the safety problem.
 - b) If the problem is not or cannot be corrected, cancel or delete any or all events that affect the safety of persons on the ground or in the air.
- 4) Note any discrepancies and the action taken in the comment portion of the GAR.

L. Debrief. After conclusion of the aviation event, discuss with the holder of the Certificate of Waiver or Certificate of Authorization, or a representative, and the performers:

- Areas of noncompliance
- Safety-related problems
- Aerobatic competency
- Opportunities for improvement
- If a similar event is planned for next year, follow up with a letter outlining areas that need improvement
- If no problems were encountered, apprise the sponsor that the show went well

M. Office File. Prepare an office file consisting of the following:

- Certificate of Waiver and/or Certificate of Authorization as applicable
- Authorization (OpSpec, Authorizing Document or Certificate of Authorization), as applicable

EBOOK VOLUME 12. SURVEILLANCE

- Record of meetings and telephone conversations
- Aviation Event Preshow Briefing Guide (Volume 11, Chapter 2, Figure 11.2.1.29)

N. GAR. Make appropriate GAR entry.

12.15.8.27. TASK OUTCOMES.

A. Complete the GAR.

B. Completion of this task can result in the following:

- Satisfactory inspection
- Communicate concerns/findings to the Director, Flight Operations Division
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

12.15.8.29. FUTURE ACTIVITIES.

- Future surveillance of recurring or annual special aviation events
- Site feasibility evaluation for future or recurring specials aviation events

Figure 12.15.8.1. GACA Form 8710 7, Statement of Aerobatic Competency

EBOOK VOLUME 12. SURVEILLANCE

GENERAL AUTHORITY OF CIVIL AVIATION (GACA) STATEMENT OF AEROBATIC COMPETENCY	
PILOT NAME:	
TYPE CERTIFICATE:	NUMBER:
ISSUANCE DATE:	EXPIRATION DATE:
INSPECTOR (SIGNATURE):	
MANEUVER LIMITATIONS:	
ALTITUDE LIMITATIONS:	AUTHORIZED AIRCRAFT:
I understand that this statement of competency does not authorize deviation from GACAR Part 91 except as defined by waiver thereto, or to the terms of Special Provisions contained in any waiver to GACAR Part 91.	
PILOT (Signature):	

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 15. MISCELLANEOUS PART 61, 91, 121, 125, 135, 141 AND 145 SURVEILLANCE/INSPECTIONS

Section 9. Air Show/Air Race Surveillance (Airworthiness)

12.15.9.1. GACA ACTIVITY REPORT (GAR).

A. 3684 (AW) (Air Show)

B. 3685 (AW) (Air Race)

12.15.9.3. OBJECTIVE. This section provides guidance for ensuring that those aircraft, authorized to participate in an air show or air race, comply with regulatory requirements and maintain the highest possible standards of safety.

12.15.9.5. GENERAL. The surveillance of air shows and/or air races is mainly an operations function. Aviation safety inspectors (Inspectors) (Airworthiness) will work closely with Inspectors (Operations) in the surveillance of these aviation events.

A. Inspector Duties. The Inspector's primary functions are to ensure the continued airworthiness of participating aircraft, monitor the safety practices of participating individuals, and ensure compliance with waivers and authorizations. The assigned Inspector's duties include:

- Preseason evaluation meeting
- Evaluation of waivers and authorizations
- Recommendation of issuance or denial
- Air show/race surveillance
- Review of airman and aircraft certification

1) *Review of Certification.* The review of airman and aircraft certification involves two main responsibilities:

EBOOK VOLUME 12. SURVEILLANCE

- Review of the aircraft records to ensure that the state of inspection is current, if previous arrangements were made with the operator prior to the arrival of the aircraft at the show
- Examination of the general condition of the aircraft

2) *Advance Notification.* To avoid last minute delays, the Inspector should have the air show coordinator remind the participants to have the appropriate aircraft and packing records ready for inspection before the show. Early contact with the organizers of air show events is encouraged so that informational activities and accident prevention strategies can be planned.

3) *Responsibility for Safety.* While the show sponsor is responsible for crowd control, Inspectors should keep in mind the safety of the spectators. Any safety-related deficiencies shall be brought to the attention of the show/race monitor immediately.

B. Inspector Authority.

1) Although the Inspector's authority is not limited to the following, the Inspector is authorized to:

- Change the effective time and date of the waiver after proper coordination with the appropriate air traffic facility
- Add performers to the Schedule of Events if all terms of the Certificate of Waiver and/or Certification of Authorization can be met
- Cancel or delay any acts if it is deemed necessary in the interest of safety

2) Because of fluctuating weather conditions, sometimes participants will be unable to perform their normal routines. Inspectors should avoid canceling an act if it is possible to cancel parts in order to allow the demonstration to continue in a modified form.

3) Aviation events normally operate on very tight schedules; therefore, Inspectors should not interrupt events except to address safety-related issues requiring immediate attention.

C. Aircraft Used in Parachute Operations.

EBOOK VOLUME 12. SURVEILLANCE

- 1) Aircraft engaged in sport parachuting operations must be operated in accordance with the rules prescribed in General Authority of Civil Aviation Regulation (GACAR) Part 91. Additionally, large aircraft may be subject to the applicability of GACAR Part 125.
- 2) Aircraft involved in parachute jumping operations may have been modified to accommodate the jumpers. Such modifications require documentation of approval by the General Authority of Civil Aviation (GACA).

12.15.9.7. MILITARY AIRCRAFT.

A. GACAR § 91.301 defines the certification requirements for civil aircraft.

- 1) In order for surplus military aircraft to operate, they must possess an appropriate and current airworthiness certificate.
- 2) When an airworthiness certificate is appropriate and when the aircraft does not conform to a type certificate (TC) or aircraft listing (surplus military aircraft), the aircraft must have an Experimental Certificate issued for exhibition and/or air racing.

B. GACAR § 91.421 prescribes the requirements for operating limitations.

- 1) The operating limitations assigned to the aircraft must include the serial number of the aircraft and must be kept together with the airworthiness certificate. These materials will contain the required maintenance and operational limitations.
- 2) Limitations will state that the aircraft shall not be flown unless it is maintained and operated in accordance with appropriate military technical publications or manufacturers' instructions for the aircraft. In many cases, the specific publications will be included.
- 3) The aircraft limitations may also contain a statement to the effect that no person shall operate the aircraft unless the aircraft has had a condition inspection performed within the preceding 12 calendar months in accordance with GACAR Part 43, Appendix C and has been found to be in a condition for safe operation. Within the record of the inspection, a statement should be included certifying that the aircraft has been inspected on a specific date in accordance with the scope and detail of GACAR Part 43, Appendix C and found to be in a condition for safe operation. The entry should include the aircraft total time-in-service, and the name, signature, and certificate type and number of the person performing

EBOOK VOLUME 12. SURVEILLANCE

the inspection.

C. The Inspector should verify that the airworthiness certificate is available and refer to the attached operating limitations for any specific information concerning area of flight, authorized maneuvers for which the aircraft has been tested and approved, type of maintenance necessary, and method of verifying that the aircraft is in a condition for safe operation.

D. Surplus military turbine -powered airplanes, must be operated only by those persons authorized by GACA, via a letter of authorization (LOA). It is imperative that Inspectors, when handling applications for such experimental exhibition certificates, ensure that the purpose is valid.

E. Inspectors monitoring aviation events where a military jet aerobatics demonstration will be performing should have satisfactorily completed on-the-job training in a military aviation event. This training should include participation in the feasibility determination, the preseason evaluation meeting, waiver preparation, and air show surveillance.

12.15.9.9. COORDINATION REQUIREMENTS. This task may require coordination with Inspectors (Operations), and may require coordination with Air Traffic Services (ATS).

12.15.9.11. REFERENCES, FORMS, AND JOB AIDS.

A. References.

- GACAR Part 1, 43, 61, 91, 103, 105 and 125
- Volume 11, Chapter 2, Issue a Certificate of Waiver or Authorization for a Special Aviation Event
- FAA AC 103-7 (as amended), The Ultralight Vehicle, found at website.
- FAA AC 105-2 (as amended), Sport Parachute Jumping, found at website.

B. Forms.

- GACA Activity Report (GAR)
- Certificate of Waiver

EBOOK VOLUME 12. SURVEILLANCE

- Certificate of Authorization

C. Job Aids. None

12.15.9.13. PROCEDURES.

A. Review the Certificate of Waiver and Certificate of Authorization. Review the Certificate of Waiver and/or Certificate of Authorization to determine the type of aircraft involved in the activity.

B. Attend the Preshow Briefing. Discuss any requirements regarding scheduling, inspection of the air show/air race aircraft, and related activities.

C. Inspect the Participating Aircraft.

1) Review the aircraft records to ensure the following:

- The currency of the state of inspection
- Modifications made to aircraft to accommodate sport parachutists have documentation of approval by GACA.

2) Inspect the aircraft for the following:

- The aircraft's general condition
- Modifications made for the accommodation of sport parachute jumping
- Current status of operating limitations for door removal, if applicable. (Consult FAA AC 105 2 for a list of aircraft that have been flight tested for operating limitations with the door removed)
- Airworthiness certificates, registration certificates, and operating limitations, as appropriate

D. Inspect Parachutists' Equipment. Inspect parachutists' equipment to ensure the following:

- The main parachute has been packed within the previous 120 days

EBOOK VOLUME 12. SURVEILLANCE

- The auxiliary parachute has been packed by a certificated and appropriately rated rigger
- The equipment has been manufactured under a TC or Technical Standard Order (TSO), or is a personnel carrying military parachute
- The auxiliary parachute has been packed within the time requirements prescribed by § 105.43
- The certificated parachute rigger's seal has been installed properly
- The parachute packs and harness are in good condition

E. Brief Air Show/Air Race Inspector-in-Charge. Bring any safety-related deficiencies to the immediate attention of the Inspector in charge (IIC) of monitoring the air show/air race.

12.15.9.15. TASK OUTCOMES.

A. Complete the GAR.

B. Completion of this task can result in the following:

- Satisfactory inspection
- Communicate concerns/findings to the Director, Airworthiness Division
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

12.15.9.17. FUTURE ACTIVITIES.

- Future surveillance of recurring or annual special aviation events
- Site feasibility evaluation for future or recurring special aviation events

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 15. MISCELLANEOUS PART 61, 91, 121, 125, 135, 141 AND 145 SURVEILLANCE/INSPECTIONS

Section 10. Monitor Mechanic, Repairman and Inspection Authorization Holder

12.15.10.1. GACA ACTIVITY REPORT (GAR).

- A. 3671 (AW) (Mechanic)
- B. 3672 (AW) (Repairman)
- C. 3674 (AW) (Inspection Authorization)

12.15.10.3. OBJECTIVE. This section provides guidance for conducting surveillance of mechanics, repairmen, and Inspection Authorization (IA) holders.

12.15.10.5. GENERAL.

A. The basic objective of this surveillance is to promote aviation safety by ensuring compliance with applicable General Authority of Civil Aviation Regulation (GACAR) parts. Components of such surveillance include the following:

- Observation of airmen performing or supervising maintenance
- Evaluation of airmen having completed maintenance
- Review of maintenance records to determine compliance with the regulations

B. Aviation safety inspectors (Inspectors) should give prompt attention to any report of an alleged violation of the GACARs pertinent to maintenance airmen. Inspectors should concentrate their efforts in those areas where there are reasons for suspicion or evidence of non-compliance with the GACARs. The frequency of surveillance may be based on the volume of work being accomplished by a maintenance airman. It is logical to increase the frequency of surveillance on maintenance airmen who perform a comparatively high volume of work.

C. An Inspector may encounter conditions or practices that, if allowed to continue, could result

EBOOK VOLUME 12. SURVEILLANCE

in the return to service of an un-airworthy item and/or a violation of GACAR. The Inspector should bring these conditions or practices to the immediate attention of the airman involved. The Inspector should explain the cause for concern and render guidance as appropriate.

12.15.10.7. COORDINATION REQUIREMENTS. None.

12.15.10.9. REFERENCES, FORMS, AND JOB AIDS.

A. References.

- GACAR Part 66, 121, 125, 135 and 145

B. Forms. GACA Activity Report (GAR).

C. Job Aids. None.

12.15.10.11. PROCEDURES.

A. Verify Proper Certification. Ensure that airmen are properly certificated for all work for which they are responsible.

B. Review Repairman Certificates. Ensure that repairman certificate ratings are specific and appropriate to the work being performed. Ensure that certificates are kept within the immediate area. If the ratings appear inappropriate, inform the repairman that recertification may be required.

C. Review Inspection Authorizations (IA).

1) Ensure that the authorization is current as required by GACAR § 66.85 and that it has been renewed and endorsed by an Inspector. Ensure that the IA holder has a current mechanic's certificate with both airframe and powerplant ratings.

2) Ensure that the IA holder has the following available:

- A current and appropriate set of Airworthiness Directives (ADs)
- A current and appropriate set of type certificate data sheets
- Current and appropriate GACAR parts

EBOOK VOLUME 12. SURVEILLANCE

- Manufacturers' maintenance instructions, as required by GACAR Part 43
- Other data as needed (may include maintenance alerts, service difficulty reports, etc.)

D. Review Mechanic Certificates.

- 1) Determine whether the ratings are appropriate to the work performed. Ensure that the mechanic does not exceed the privileges and limitations of the certificate.
- 2) Question the mechanic to ensure understanding of the manufacturer/maintenance manual(s) for the specific operation concerned.
- 3) Determine if the mechanic meets the requirements for recent experience.
- 4) Ensure that the airman's certificate is within the immediate area where the airman normally exercises the privileges of the certificate.

12.15.10.13. TASK OUTCOMES.

A. GAR. Complete the GAR.

B. Completion of this task can result in the following:

- Satisfactory inspection
- Communicate concerns/findings to the Director, Certification and Licensing Division
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

12.15.10.15. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, or other job tasks are warranted.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 15. MISCELLANEOUS PART 61, 91, 121, 125, 135, 141 AND 145 SURVEILLANCE/INSPECTIONS

Section 11. Avionics Test Equipment Inspection

12.15.11.1. GACA ACTIVITY REPORT (GAR).

A. GAR 3686 (AW)

12.15.11.3. OBJECTIVE. This section provides guidance for inspecting test equipment used during the calibration, repair, and overhaul of avionics equipment.

12.15.11.5. GENERAL. A repair facility certified to maintain airborne avionics equipment must have test equipment suitable to perform that maintenance. Regardless of the type of equipment being used, the minimum test equipment necessary to perform the maintenance, as required by the manufacturer, is acceptable.

A. Test Equipment Equivalency. Normally, test equipment which is equivalent to that recommended by the appliance or aircraft manufacturer will be accepted.

B. Test Equipment Updating.

1) State-of-the-art advances often affect the modes and parameters of avionics equipment.

Therefore, previously accepted test equipment may need to be modified to ensure compatibility with any new equipment used.

2) Surplus military test equipment is sometimes used by repair facilities as a primary test unit or as a backup in case of failure of the primary test unit. Modification of this equipment to current industry standards and the equivalency requirements may be required prior to use.

C. Test Equipment Calibration. The regulations require that maintenance facilities test the test equipment at regular intervals to ensure correct calibration.

1) Traceability of the equipment used in calibration of avionics equipment can be certified

EBOOK VOLUME 12. SURVEILLANCE

in several ways. One source for determining this certification is the U.S. National Institute of Standards and Technology. Traceability can be verified by reviewing test equipment calibration records for references to U.S. National Institute of Standards and Technology test report numbers. These numbers will certify traceability of the equipment used in calibration.

- 2) If the repair station uses a standard for performing calibration, that standard cannot be used to perform maintenance.
- 3) The calibration intervals for test equipment will vary with the type of equipment, environment, and use. The accepted industry practice for calibration intervals is usually 1 year.

12.15.11.7. COORDINATION REQUIREMENTS. This task may require coordination with the manufacturer.

12.15.11.9. REFERENCES, FORMS, AND JOB AIDS.

A. References.

- General Authority of Civil Aviation Regulations (GACAR) Part 43, 121, 135, and 145
- Volume 4, Chapter 10, Section 3, Evaluate Repair Station Facilities and Equipment for Part 145

B. Forms. GACA Activity Report (GAR).

C. Job Aids. None.

12.15.11.11. PROCEDURES.

A. Perform the Inspection.

- 1) Determine what test equipment is required by reviewing the operator/manufacturer's maintenance manuals.
- 2) Ensure that the operator/repair station has full control of the test equipment (i.e.,

EBOOK VOLUME 12. SURVEILLANCE

ownership, lease) and that the test equipment is located on the premises.

3) Ensure that the following is accomplished according to the operator/repair station's accepted manual procedures:

- Identification of equipment
- Recording of the date and person/organization calibrating each piece of test equipment

4) Ensure that inspection and calibration of the precision tools and test equipment is done in accordance with the operator/repair station's manual procedures.

B. Inspect Automatic Test Equipment (ATE).

1) Ensure that the ATE testing program provides an in-depth analysis that ensures the aircraft components and testing standards are functionally tested within the prescribed manufacturer's limits.

2) Verify that management control is accomplished in accordance with the operator/repair station's accepted manual and includes procedures for the following:

- The setting of limits and standards
- The performance of evaluation checks and tests
- The updating of a listing that identifies each ATE test by number and a reference to the applicable section of the component manual
- Controlling and identifying the revision status of software programs

3) Ensure the operator/agency's purchasing maintenance service, including ATE programs, is accomplished in accordance with the operator/agency's approved maintenance program.

C. Analyze Results. Review inspection results and discuss any discrepancies with the operator/agency.

12.15.11.13. TASK OUTCOMES.

EBOOK VOLUME 12. SURVEILLANCE

A. Complete the GAR

B. Completion of this task can result in the following:

- Satisfactory inspection
- Communicate concerns/findings to the Director, Airworthiness Division
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

12.15.11.15. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, or other job tasks are warranted.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 15. MISCELLANEOUS PART 61, 91, 121, 125, 135, 141 AND 145 SURVEILLANCE/INSPECTIONS

Section 12. Altimeter Setting Sources Inspection

12.15.12.1. GACA ACTIVITY REPORT (GAR).

A. 3687 (AW)

12.15.12.3. OBJECTIVE. This section provides guidance for inspecting altimeter setting sources.

12.15.12.5. GENERAL. It is the responsibility of the aviation safety inspector (Inspector) (Airworthiness) to inspect altimeter setting sources in coordination with the operator.

12.15.12.7. REFERENCES, FORMS, AND JOB AIDS.

A. References. Federal Aviation Administration (FAA), Advisory Circular (AC) 91-14 (as amended), Altimeter Setting Sources.

B. Forms. GACA Activity Report (GAR)

C. Job Aids. None.

12.15.12.9. PROCEDURES.

A. Perform the Inspection.

1) Inspect the facility to ensure the following:

a) Two aircraft type-sensitive altimeters, which meet the system test and inspections required by General Authority of Civil Aviation Regulations (GACAR) Part 43, appendix D, and/or Technical Standard Order-C10b for new altimeters, and/or FAA 91-14 (as amended), are mounted in a suitable box or rack.

b) The facility has established a known height above mean sea level +/- 1 foot (0.3m) and has this marked on the instruments or posted immediately adjacent to them.

EBOOK VOLUME 12. SURVEILLANCE

- c) The facility is maintained at a reasonably consistent temperature and is free from drafts.
 - d) Proper venting is being used, and if an error in excess of 10 feet (3 m) is induced by the use of forced air systems, an outside vent (static source) is in use.
 - e) The initial requirements are still being met.
 - f) The altimeters have been recertified within the last 24 calendar months or when the difference between the two altimeters exceeds 0.05 Hg on the barometric scale.
- 2) Verify the method and frequency used to communicate altimeter setting information to the pilot.

B. Analyze Results. Analyze inspection results and brief the operator, as required.

12.15.12.11. TASK OUTCOMES.

A. Complete the GAR

B. Completion of this task can result in the following:

- Satisfactory inspection
- Communicate concerns/findings to the Director, Airworthiness Division
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

12.15.12.13. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, or other job tasks are warranted.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 15. MISCELLANEOUS PART 61, 91, 121, 125, 135, 141 AND 145 SURVEILLANCE/INSPECTIONS

Section 13. Special Equipment or Test Apparatus Evaluation

12.15.13.1. GACA ACTIVITY REPORT (GAR).

A. 3626 (AW)

B. 3658 (AW)

12.15.13.3. OBJECTIVE. This section provides guidance for evaluating special equipment and test apparatus used by a certificate holder in maintaining aircraft and their associated components.

12.15.13.5. GENERAL. A certificate holder must make a determination of acceptability for equivalency of special equipment and/or test apparatus used in maintaining aircraft and their associated components.

A. The term equivalency, as used throughout this section, means equivalent to that recommended by the Original Equipment Manufacturer (OEM) for the purpose of performing specific tests or making required measurements to determine airworthiness. To determine equivalency, a certificate holder should compare the required test operations or specifications and the technical data of the special equipment or test apparatus (both the data recommended by the manufacturer and the data proposed by the certificate holder). The special equipment or test apparatus may look different, be made of different materials, be a different color, etc. However, as long as the tool is functionally equivalent for the specific test application, the tool may be used.

B. The accuracy of special equipment or test apparatus used to perform a specific task should be at least equal to that recommended by the manufacturer.

12.15.13.7. BACKGROUND.

A. General Authority of Civil Aviation Regulations (GACAR) § 43.13(a) states, “If special equipment or test apparatus is recommended by the manufacturer involved, he must use that equipment or apparatus or its equivalent acceptable to the President.”

EBOOK VOLUME 12. SURVEILLANCE

B. A finding of equivalency can only be made based on an evaluation of a technical data file. Additionally, demonstrating functionality of the special equipment or test apparatus may sometimes be required. A technical data file may include, but is not limited to, data, drawings, specifications, instructions, photographs, templates, certificates, and reports. For calibration equipment, the technical data file should also include data sheets attesting to its accuracy when calibration standards are necessary. This file should also describe any special manufacturing processes that are used in the controlling processes, including gauges and recording equipment. If calibration equipment is involved, documented procedures will be used to evaluate the adequacy of the calibration equipment, and the equipment must be traceable to a standard provided by the equipment manufacturer, such as to the U.S. National Institute of Standards and Technology (NIST). With equipment manufactured in a country other than the United States, a standard of the country of manufacture may be used if found acceptable by the General Authority of Civil Aviation (GACA).

C. Most of the test apparatus used for making airworthiness decisions are generic in nature and designed to make measurements that are not unique to a specific manufacturer's product or process. Equipment that is not "special" in nature only needs to be designed and calibrated to make measurements within the specific manufacturer's tolerances to be considered equivalent for those tests or measurements.

NOTE: GACA may allow certificate holders to fabricate their own equipment and/or apparatus (test fixtures, jigs, tooling, etc.) without GACA assessment. Many certificate holders, especially those which employ engineering departments, are very well versed in fabricating special equipment or test apparatus. In some cases, the fabricated special equipment or test apparatus has exceeded the component manufacturer's requirements for accuracy, reliability, etc.

- 1) Occasionally, a tool that was manufactured by an air carrier did not always produce the same results as the tool from the OEM. Further, previous industry-wide validations revealed that some tools were not equivalent in function to the OEM's specifications.
- 2) Some tools had been manufactured by a method known as reverse engineering. Reverse engineering alone without data, drawings, testing, or reports, may not adequately produce a tool or fixture functionally equivalent to an OEM's requirements.
- 3) With recent technological advances, highly specialized test equipment or test apparatus is frequently required. Use of such equipment supports the continued airworthiness of

EBOOK VOLUME 12. SURVEILLANCE

aircraft systems and components to the manufacturer's specifications and tolerances.

4) Determining the equivalency of equipment and/or apparatus is the primary responsibility of the certificate holder, not the GACA. The basis of equivalency for equipment or apparatus for products being maintained must meet the OEM's standards and specifications for tolerances and accuracy.

12.15.13.9. COORDINATION REQUIREMENTS. This task may require coordination with other specialties within the GACA - most notably, the Airworthiness Engineers.

12.15.13.11. REFERENCES, FORMS, AND JOB AIDS.

A. References. GACAR Part 43, 121, 135 and 145

B. Forms. GACA Activity Report (GAR)

C. Job Aids. None.

12.15.13.13. PROCEDURES.

A. Because it is the primary responsibility of the certificate holder, the aviation safety inspector (Inspector) may only make an acceptance of functional equivalency for special equipment or test apparatus. The following procedures are listed as a reference for making this determination.

- 1) Ensure that the limitations, parameters, and reliability of the equipment allow it to function equivalently to the OEM's recommended equipment for the specific test application. This may include the review of data from the OEM or another source of data used to manufacture the equipment.
- 2) Compare the technical data used to that of the manufacturer (if obtainable; often, manufacturers are reluctant to release technical information about tools and test equipment) and that used by the certificate holder. If the OEM's technical data is not available, then the certificate holder must perform an evaluation to make a determination of functional equivalency. If needed, the Inspector should observe test demonstrations of the equipment.
- 3) Ensure that specific instructions pertaining to the proper use of any special equipment or test apparatus are provided in and adequately referenced in the repair station's manual or the operator's Continuous Airworthiness Maintenance Program (CAMP).

EBOOK VOLUME 12. SURVEILLANCE

4) Ensure that the certificate holder has included any special equipment or test apparatus that requires inspection and/or calibration in their test inspection and calibration programs. They should also address the regular inspection and calibration of any special equipment or test apparatus used for making final airworthiness determinations.

5) The Inspector should review the repair station's manual or the operator's CAMP to ensure that it has adequate procedures in place, if applicable, for manufacturing and/or determining equivalency of any special equipment or test apparatus in use.

B. Standard industry practice would dictate that any special equipment or test apparatus that is used to make a critical airworthiness decision or that requires calibration or inspection be given a unique part number and serial number to identify it within the certificate holder's inventorying system.

C. Ensure that the OEM maintains the records dealing with special equipment or test apparatus in a manner acceptable to the GACA for as long as the records are used for making airworthiness determinations.

12.15.13.15. TASK OUTCOMES.

A. Complete the GAR.

B. Completion of this task can result in the following:

- Satisfactory inspection
- Communicate concerns/findings to the Director, Airworthiness Division
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

12.15.13.17. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, or other job tasks are warranted.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 15. MISCELLANEOUS PART 61, 91, 121, 125, 135, 141 AND 145 SURVEILLANCE/INSPECTIONS

Section 14. Inspect a Repair Facility Accomplishing Composite Maintenance and Repairs

12.15.14.1 GACA ACTIVITY REPORT (GAR) CODES.

A. 4652 (AW)

12.15.14.3 OBJECTIVE. This section provides guidance for inspecting a repair facility that repairs composite structures and/or components.

12.15.14.5 GENERAL.

A. Benefits and Maintenance Needs of Composites. Using composites in aircraft structures and other components has increased fuel savings by reducing weight without sacrificing structural strength. These characteristics are vital to meeting the demands of the aerospace industry. Additional properties, such as fatigue and corrosion resistance, provide expanded design capabilities. Maintaining and repairing composites is complex and requires specialized knowledge and skills to ensure the continued airworthiness of these products.

B. Regulations.

- 1) While regulations don't specifically define requirements for organizations accomplishing composite maintenance and repairs, multiple regulations require certificate holders to have training programs to ensure that employees who perform maintenance are trained and qualified. Additionally, a certificate holder must ensure that they provide competent personnel and adequate facilities to properly perform maintenance.
- 2) GACAR Part 145 provides for the issuance of repair station ratings for composite construction of both large and small aircraft. GACAR Part 145 also addresses equipment, materials, and data requirements that pertain to repairing and maintaining composite structures and components.

12.15.14.7 SURVEILLANCE. Conducting surveillance of a facility that performs composite repairs

EBOOK VOLUME 12. SURVEILLANCE

varies from facility to facility depending on the types of repairs it performs and equipment it uses. The Federal Aviation Administration (FAA) developed the Online Job Aid for Evaluating a Repair Facility Conducting Composite Repairs, which you can find in the Flight Standards Information Management System (FSIMS) database at <http://fsims.avs.faa.gov>. Once in FSIMS, go to "Publications," and look under "Other Documents." The job aid provides a series of comprehensive questions to assist you in evaluating a composite repair facility. This isn't a pass/fail checklist, but rather a series of questions pertaining to a repair facility's organization as well as questions pertaining to training programs, facilities, technical data, repair procedures, equipment, and material handling.

12.15.14.9 SPECIAL EMPHASIS ITEMS.

A. Training and Qualifications. Training and qualifications of all composite repair personnel is critical as the repairs to composite aircraft and components are process dependent. Engineers, technicians, and inspectors all need specific training as a part of the composite repair team. A repair facility should develop its qualification criteria for repair personnel to ensure they understand the technical principles involved in maintaining and repairing aircraft composites. The repair facility should develop a written program describing the guidelines used to train and qualify its maintenance personnel. Maintenance personnel should receive documented initial and recurrent training in the standards, methods, materials, and types of repairs they accomplish. This training should be a combination of classroom, practical, and on-the-job training (OJT). The repair facility's written document will specify the frequency and content of the recurrent training.

B. Repair Facilities. A repair facility should have a Quality Control Manual (QCM) specifying procedures and instructions (GACAR Part 145 repair stations are required to have a QCM). This ensures inspection continuity from the incoming inspections to the final inspections prior to return to service of any item. The repair facility should have suitable facilities for properly storing, segregating, and protecting materials, parts, and supplies. This includes areas for properly protecting parts and subassemblies during disassembly, cleaning, inspection, repair, alteration, and assembly. The repair facility should also consider the following recommendations:

- 1) The repair facility should meet the unique environmental requirements for all processes utilized.
- 2) If possible, the repair facility should accomplish repairs using a designated clean room.

EBOOK VOLUME 12. SURVEILLANCE

- 3) The repair facility should have a process for retaining documents that records temperature/humidity during repairs.
- 4) The repair facility should control temperature and humidity.
 - a) Air temperature should be between 18-30°C (64-86°F).
 - b) Relative humidity should be 60 percent absolute maximum with 35 percent considered ideal.
- 5) There should be sufficient cold storage for consumables.
- 6) The repair facility should properly store and control special tools and equipment since some composite repairs require such items.

C. Repair Technical Data. The repair facility must have and utilize current technical data while performing composite maintenance and repairs. The technical data could either be Original Equipment Manufacturer (OEM)-generated or in-house generated. In the case of a repair station, the technical data must meet any requirements established by an air carrier for which maintenance is performed. In all cases, the technical data must be approved (or deemed approved) by the GACA (see GACA Advisory Circular AC 021-003 for further details). The data should specify items, such as:

- Type of repair (including repair size limits),
- Materials and cure temperatures,
- Additional repair plies, if required, and
- High-Intensity Radiated Fields (HIRF) and lightning protection, if required.

D. Repair Procedures. Composite repairs are process dependent, which means they must comply with technical data during the repair process. The repair facility must specify and use nondestructive inspection (NDI) techniques for pre- and post-repair inspections. This helps determine the extent of damage, which ensures delaminations have not occurred during the repair process. Detailed repair instructions are essential in defining material and process specifications and should include the following items:

EBOOK VOLUME 12. SURVEILLANCE

- Cleaning process,
- Water break test,
- Strip chart from hot bonder,
- Pressure chart for vacuum bagging,
- Lay-up plies and orientation,
- NDI procedures utilized, and
- A copy of the approved data with the records for a major repair or alteration.

E. Equipment, Tooling, and Calibration. The repair facility must have a program defining how and when it calibrates specific equipment. The repair facility should base its calibration program on the manufacturer's recommendations and/or engineering judgment. The calibration program must include the tracking and calibration of employee-owned tooling and equipment. The repair facility must document a process for tooling qualification (e.g., molds, mandrels, fixtures, etc.). The process should include:

- Process specifications,
- Conformity checks,
- Materials, and
- Testing.

F. Material Handling.

1) Material Handling and Procedures. The repair facility should have an area designated as a storage area for raw materials, which should be clearly labeled and separated based on individual material specifications. The repair facility should have a documented procedure regarding the acceptance of raw materials that, as a minimum, tracks the following items:

- a) Temperature and humidity control of materials from the manufacturer/supplier to the facility storage area.

EBOOK VOLUME 12. SURVEILLANCE

- b) Documentation of batch/roll numbers of all composite materials utilized for repairs.
- c) Procedures for documenting material in/out times.
- d) A process to control shelf life of consumable materials.
- e) A process for defining the material testing process for incoming materials, as well as qualification tests.

2) Conformity and Quality of Composite Materials. When a repair facility purchases composite materials from a supplier listed in an OEM's vendor list (as contained in documents such as a Structural Repair Manual (SRM) or Component Overhaul Manual), the OEM assumes the responsibility for ensuring that the materials conform to an industry-accepted material specification. The OEM will perform quality audits of the material manufacturer to ensure that the products are manufactured and controlled in accordance with accepted industry standards. The purchaser typically accepts the results of these audits. This in no way relieves the end user from the responsibility of ensuring that the materials are protected from contamination, temperature deviations, or problems caused by storage and handling after the original manufacturing process.

12.15.14.11 REFERENCES, FORMS, AND JOB AIDS.

A. References (current editions):

- FAA Advisory Circular (AC) 20-107, Composite Aircraft Structure.
- FAA AC 23-20, Acceptance Guidance on Material Procurement and Process Specifications for Polymer Matrix Composite Systems.
- FAA AC 43-214, Repairs and Alterations to Composite and Bonded Aircraft Structure.
- FAA AC 65-31, Training, Qualification, and Certification of Nondestructive Inspection (NDI) Personnel.
- FAA AC 65-33, Development of Training/Qualification Programs for Composite Maintenance Technicians.

EBOOK VOLUME 12. SURVEILLANCE

B. Forms. None.

C. Job Aids. Online Job Aid for Evaluating a Repair Facility Conducting Composite Repairs at <http://fsims.avc.faa.gov>.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 15. MISCELLANEOUS PART 61, 91, 121, 125, 135, 141 AND 145 SURVEILLANCE/INSPECTIONS

Section 15. Ultralight Vehicle Operations Surveillance

12.15.15.1. GACA ACTIVITY REPORT (GAR).

A. 1688 (OP)

B. 3682 (AW)

12.15.15.3. OBJECTIVE. The objective of this task is to determine that the operation of an ultralight vehicle adheres to the applicable General Authority of Civil Aviation Regulations (GACAR) parts and safe operating practices.

12.15.15.5. GENERAL.

A. GACAR Part 103. These regulations are primarily operating rules similar to those for aircraft. The rules in GACAR Part 103 are intended to ensure the safety of those not involved in the sport, including persons and property on the ground and other users of the airspace. The regulations regarding aircraft certification, and pilot certification are not applicable to ultralight vehicles or their operators.

B. Ultralight Vehicles vs. Aircraft. Not all “ultralights” are subject to GACAR Part 103. Some ultralight models cannot operate under GACAR Part 103 because of mass or speed limitations. These models must be certificated as aircraft before they can be operated. All ultralights meeting GACAR § 103.1 criteria may be operated as ultralight vehicles in accordance with GACAR Part 103, or may be certificated as aircraft and operated under the applicable regulations.

C. Ultralight Operator Responsibilities. Operators of ultralight vehicles are expected to know, understand, and comply with GACAR Part 103 requirements before operating the vehicle. This includes ensuring that the ultralight meets all applicable criteria of GACAR § 103.1 and obtaining documents to provide the evidence required by GACAR § 103.3. All operators should also be aware that their ultralight may differ significantly from the advertised mass of the particular model, and may not qualify for operation under GACAR Part 103. This difference may

EBOOK VOLUME 12. SURVEILLANCE

be due to construction methods, configurations, or additional equipment installed. It is also the operator's responsibility to determine, or have a reputable independent party (such as an Aviation Club under GACAR Part 149) determine, whether the ultralight meets the Part 103 mass criteria.

D. Inspector Considerations. There are four major considerations for aviation safety inspectors (Inspectors) to remember when dealing with ultralight operations:

- Ultralight vehicle operation is a sport or recreational activity
- Users of ultralight vehicles, like participants in any sport, are responsible for assessing the hazards involved and ensuring their own safety
- The General Authority of Civil Aviation's (GACAs) responsibility is to ensure the safety of other airspace users and persons and property on the ground
- The GACA's enforcement policies also apply to GACAR Part 103 as they do to other regulations

E. Ultralight Inspection Authority. The GACA has the legal authority to inspect any ultralight, whether it is operated as an aircraft under GACAR Part 91 or as an ultralight vehicle operated under GACAR Part 103. In the case of an ultralight vehicle operated under GACAR Part 103, this authority is usually exercised only when an Inspector has reason to doubt the validity of the evidence provided by the operator, or has reason to doubt that the vehicle conforms to that evidence. Other reasons for inspecting an ultralight vehicle include the following:

- Accident
- Incident
- Complaint
- Aerodrome, ramp, or other scheduled inspection
- Airshow event

12.15.15.7. OPERATION OF ULTRALIGHT VEHICLES FROM AERODROMES .

EBOOK VOLUME 12. SURVEILLANCE

A. Aeronautical Activity. Ultralight vehicle operators usually require the approval of aerodrome authorities before conducting operations from an aerodrome. Operation of ultralight vehicles is considered an aeronautical activity much the same as parachute jumping.

B. Use of Aerodromes. Aerodrome authorities should establish policies, including reasonable training requirements that they believe are necessary to provide safe accommodations to ultralight vehicles. When assessing the safety of ultralight vehicle operations from aerodromes, the Inspector should bear in mind the operating characteristics of ultralight vehicles, the lack of pilot certification standards, and the fact that these vehicles must yield right-of-way to aircraft under all circumstances.

12.15.15.9. DETERMINING GACAR PART 103 APPLICABILITY. The GACA has provided fairly simple methods for the individual operator to use in determining whether an ultralight meets all of the applicable elements of GACAR § 103.1. As a resource, Federal Aviation Administration (FAA) Advisory Circular (AC) 103-7 (as amended), The Ultralight Vehicle, provides instructions regarding these methods and what constitutes “satisfactory evidence.”

A. GACAR Part 103 Criteria. The Inspector can often determine whether GACAR Part 103 applies to specific ultralight operations by the answers to the following questions:

- 1) Is the flight for the purpose of accomplishing a task, such as patrolling a fence line or advertising a product? If so, GACAR Part 103 does not apply.
- 2) Is the vehicle equipped for some purpose other than recreation or sport, such as banner towing or agricultural spraying? If so, GACAR Part 103 does not apply.
- 3) Is the pilot advertising to perform any task using an ultralight? If so, GACAR Part 103 does not apply.
- 4) Is the pilot receiving any form of compensation for performing a task using an ultralight? If so, GACAR Part 103 does not apply.

B. Other Operations. Operations which are not sport or recreational uses, as well as those that do not meet the criteria, are discussed in FAA AC 103-7 (as amended).

12.15.16.11. OPERATOR RESPONSIBILITIES. The operator of an ultralight who states that he is operating under GACAR Part 103 should be able to present, on request, the satisfactory evidence

EBOOK VOLUME 12. SURVEILLANCE

outlined in FAA AC 103-7 (as amended). If the Inspector has reason to doubt that evidence, any enforcement action initiated should allow for a discussion of the Inspector's concerns and should provide an opportunity for the operator and the Inspector to verify the evidence. If an operator cannot provide this evidence, or if the evidence provided is not satisfactory, the ultralight shall be considered an aircraft subject to all requirements applicable to the operator. It is the responsibility of the operator to prove that the ultralight and any related operations meet the requirements of Part 103.

12.15.15.13. SPECIAL CONSIDERATIONS.

A. Single Occupant Requirement. Operations under GACAR Part 103 are limited to vehicles that "are used or intended for use" by one occupant (GACAR § 103.1(a)). An ultralight vehicle is permitted to have two occupants when the ultralight vehicle is used for flight training by an aviation club under GACAR Part 149.

B. Maximum Empty Mass. The maximum empty mass of a powered ultralight vehicle is limited to less than 115 kg (254 pounds), with exclusions for parachutes and floats. It is particularly important that Inspectors have a standardized position with respect to the makeup of the maximum empty mass of an ultralight vehicle.

- 1) During the inspection of an ultralight that operates under GACAR Part 103, determine the mass of the complete vehicle in the configuration in which it was operated.
- 2) The weighing should occur immediately after the ultralight has been operated.

C. Satisfactory Evidence. A certificated aircraft mechanic or repair station may provide a mass and balance document similar to that provided for aircraft, listing the components and attachments of the ultralight when weighed. A GACA-certificated mechanic may also make determinations and provide satisfactory evidence as to maximum fuel capacity and maximum level flight speed, provided that the maximum speeds were determined through the use of graphs provided in Appendices 1 and 2 of FAA AC 103-7 (as amended).

- 1) A recognized Aviation Club's documented findings are considered satisfactory evidence. An Aviation Club may issue their findings in relation to a given model of ultralight; these findings are then included by the manufacturer in the sale of the ultralight. Operators of that model of ultralight may use those findings as satisfactory evidence in the absence of an inspection, provided that the following conditions are met:

EBOOK VOLUME 12. SURVEILLANCE

- There are no changes or modifications to the configuration, components, engine, or propeller arrangements of the basic model originally reviewed by the committee
- Any artificial means of restricting maximum airspeed is installed and operational

D. Specially Designed Ultralights. For a specially designed craft that may not lend itself to more simple methods of determination, the GACA permits Aviation Clubs to make the necessary determinations and to provide the evidence required by GACAR § 103.3(b) to the operator.

12.15.15.15. TASK OUTCOMES. The completion of this task results in a record of the surveillance and completion of the GAR.

12.15.15.17. FUTURE ACTIVITIES. Future surveillance of ultralight activities and/or future surveillance of Aviation Clubs.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 15. MISCELLANEOUS PART 61, 91, 121, 125, 135, 141 AND 145 SURVEILLANCE/INSPECTIONS

Section 16. Light-Sport Repairman Training Facilities Inspection

12.15.16.1. GACA ACTIVITY REPORT (GAR).

A. 3670 (AW)

12.15.16.3. OBJECTIVE. This section provides guidance for the surveillance of light-sport aircraft (LSA) repairman training facilities.

12.15.16.5. GENERAL. Under the light-sport aircraft (LSA) repairman certificate, to be eligible the applicant must complete the required number of hours of GACA-accepted training identified in Volume 9, Chapter 5, Section 5, Repairmen for Light-Sport Aircraft, for the applicable class of light-sport aircraft. The required accepted training ranges from 80 hours for balloons and gliders to 120 hours for airplanes. The training must be conducted at facilities that have been issued a letter of acceptance by the GACA.

12.15.16.7. SURVEILLANCE PROCEDURES. One requirement to earn the letter of acceptance is that the applicant facility must agree to allow the GACA free and open access to the training facility.

12.15.16.9. COORDINATION REQUIREMENTS. None.

12.15.16.11. REFERENCES, FORMS, AND JOB AIDS.

A. References.

- GACAR Part 66
- Volume 9, Chapter 5, Section 5, Certificate Repairman for Light-Sport Aircraft

B. Forms.

- GACA Activity Report (GAR)

EBOOK VOLUME 12. SURVEILLANCE

C. Job Aids. None.

12.15.16.13. PROCEDURES. When auditing a light-sport aircraft repairmen training facility, the aviation safety inspector (Inspector) should:

- A.** Review the training syllabus to determine applicability to the class of light-sport aircraft being taught, note the date of the latest course revision, and ensure that the name of the instructor who is teaching the course is the same as the instructor's name on the certificate of completion/graduation.
- B.** Examine the training facility and note whether it is adequate for the number of students being trained. Note that the total number of students allowed per class is 16.
- C.** Examine the training aids, workbooks, make and model of aircraft used for hands-on training, and a copy of the applicable sections of the GACARs.
- D.** Determine if student critiques are available, whether the students have been briefed on the critique process, which student is the course proctor, and that he or she is aware of the responsibility for sending the student critiques to GACA.
- E.** If the audit is unsatisfactory, the Inspector will advise the Director, Certification and Licensing Division of the discrepancies. The Inspector will then contact the course provider and request additional information or clarification. If the course provider response is unsatisfactory, the letter of acceptance and any repairman certificate will be revoked.

12.15.16.15. TASK OUTCOMES.

A. Complete the GAR.

12.15.16.17. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, or other job tasks are warranted.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE**CHAPTER 16. PART 127 INSPECTIONS****Section 1. TBD**

NOTE: This guidance to be developed at a later date.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 17. PART 129 INSPECTIONS

Section 1. Safety Assessment of Foreign Aircraft (SAFA)

12.17.1.1. GACA ACTIVITY REPORT (GAR).

A. 1635 (OP)

B. 3635 (AW)

12.17.1.3. GENERAL. The operations of foreign air carriers who conduct operations to/from and within the Kingdom of Saudi Arabia (KSA) are regulated by General Authority of Civil Aviation Regulation (GACAR) Part 129. Further guidance concerning the surveillance of foreign operators and the safety assessment of foreign aircraft beyond that contained in this chapter can be found in the Arab Safety Assessment of Foreign Aircraft (ASAFA) document, and in International Civil Aviation Organization (ICAO) Document 8335, Part VI – “State Responsibilities Regarding Commercial Air Transport Operations by Foreign Operators.”

A. Surveillance of Foreign Operators. Experienced General Authority of Civil Aviation (GACA) aviation safety inspectors (Inspectors) who have completed appropriate task-specific training may conduct surveillance and inspections of the aircraft and operations of foreign air carriers that operate to/from and within the KSA. The surveillance task is to determine compliance with the GACARs and with the foreign operator's GACA-issued authorizing documents. Surveillance of a foreign operator should be conducted on a routine or recurring basis. If a foreign operator experiences a series of safety related accidents, incidents, violations, or complaints; or it is learned that the foreign operator has not achieved the necessary safety performance level as shown by various audit or rating authorities, the GACA should initiate surveillance as necessary to resolve any identified safety deficiencies.

1) *Surveillance Programs.* The GACA should develop its surveillance work programs based on known risk factors of the foreign air carrier and/or the State of Operator, and include intelligence collected from through any of the following sources:

a) Previous surveillance of the foreign operator.

EBOOK VOLUME 12. SURVEILLANCE

- b) Safety indicators generated by safety audits and inspections conducted by:
1. ICAO's Universal Safety Oversight Audit Programme (USOAP).
 2. The International Aviation Safety Assessment (IASA) of the Federal Aviation Administration (FAA).
 3. The European Union (EU) Ban List.
 4. The Arab Safety Assessment of Foreign Aircraft (ASAFA).
- c) The foreign operator's accident and incident history.
- d) Any other safety indicators available to the GACA.
- 2) *Work Programs.* Surveillance of GACAR Part 129 operators should be accomplished by experienced Inspectors who issue the foreign operator authorizing documents and who normally work with the foreign operator community. GACAR Part 129 surveillance includes routine and unannounced ramp inspections in addition to the surveillance items in the annual work program.

B. Foreign Operator's Aircraft. Normally, Inspectors should limit any routine or unannounced ramp inspection of a foreign operator conducting operations with foreign-registered aircraft to those operations being conducted in the KSA and should normally include only the following inspection items:

- Aircraft markings
- Aircraft airworthiness and registration certificates
- Flight crew member certificates
- Air traffic control compliance
- Taxi and ramp procedures
- Passenger enplaning/deplaning procedures

EBOOK VOLUME 12. SURVEILLANCE

- Baggage and cargo (especially dangerous goods)

C. Pilot Age Requirements. A foreign operator conducting operations under GACAR Part 129 must comply with the pilot age standard contained in ICAO Annex 1.

D. Frequency of Inspections. In addition of surveillance generated by safety indicators discussed in 12.17.1.3.A, Inspectors should initiate surveillance any time the foreign state civil aviation authority (CAA) of the respective operator requests it in writing. Foreign CAAs may request that GACA inspectors conduct significantly more in-depth inspections of their operator's operations than is required by the annual surveillance work program.

E. Need for Diplomacy. Inspectors should take particular care to diplomatically explain each discrepancy found during a GACAR Part 129 inspection to the foreign operator's representative. Inspectors may discuss suggested corrective action and appropriate GACA assistance to promptly correct each discrepancy. Items not governed by the GACARs or approved through the operator's GACA-issued authorizing documents (such as training programs, cabin safety procedures, and aircraft maintenance programs), should not be inspected, unless a specific written request has been made by State CAA of the foreign operator, or when directed by the President.

F. Disagreements Concerning Inspection Findings. If a foreign operator's representative disagrees with any inspection findings, the GACA should prepare a written report of these inspection findings and address it to the state CAA of the foreign operator.

G. ICAO Article 83 Bis Leases and Interchanges. Operators enter into leases and other interchanges, resulting in aircraft being based outside their State of Registry. States are permitted by ICAO Article 83 bis to transfer safety oversight functions under ICAO Annex 1, Personnel Licensing; Annex 6, International Commercial Air Transport and General Aviation —Aeroplanes and Helicopters; and Annex 8, Airworthiness of Aircraft for aircraft on their registry to the State who has issued the operating certificate. The Article 83 bis Agreement specifies what functions are being transferred (not all functions need be transferred), which aircraft are affected (by aircraft registration marks), and the duration. In some cases, a foreign operator serving the KSA may utilize the aircraft of another country's registry. Under the provisions of an Article 83 bis agreement, the flight crew may possess certificates or authorizations from the State of the Operator, not from the State of the Registry.

- 1) In those situations where there is an appearance of conflict, the Inspector should

EBOOK VOLUME 12. SURVEILLANCE

coordinate with the GACA senior management to obtain information from ICAO regarding the status of any active Article 83 bis Agreements between the State of the Operator and the State of Registry.

2) In the case of an aircraft entering KSA airspace where the contracting State is not a party to Article 83 bis, or where the GACA has not been duly advised about a transfer agreement in accordance with this provision, the certificates and licensees on board the aircraft must be issued or rendered valid by the State of Registry. The State of Registry would in this case remain fully responsible with regard to Article 30, Aircraft Radio Equipment; Article 31, Certificates of Airworthiness; and Article 32, Licenses of Personnel, of the Convention despite the transfer agreement with the State of the Operator.

H. English Language Endorsement. ICAO issued a requirement for all pilots flying internationally to have a proficiency in the English language that meets or exceeds a minimum expertise level, as defined in Appendix 1 to ICAO Annex 1 and the associated guidance in ICAO Doc 9835.

1) Inspectors assigned ramp inspection duties on foreign aircraft flying into the KSA are expected, as part of the ramp inspection, to verify that the pilot certificate/license does have the English Language endorsement or verify the country's posted means for ensuring this requirement are being met.

2) If an Inspector has concerns or questions about a pilot's English Language endorsement, lack of endorsement, or ability to speak English at an appropriate level, as defined in ICAO Standards, the Inspector should contact his manager who should ensure that follow up is coordinated with the issuing CAA.

12.17.1.5. HEIGHTENED SURVEILLANCE. Several sources of information exist which can provide the GACA with a better awareness of various safety performance indicators for the foreign operators which may operate within KSA airspace. These indicators, as mentioned in 12.17.1.3.A, are generated by various aviation authorities through their auditing and safety assessment programs. These indicators should be considered along with the results of the GACA's own surveillance of GACAR Part 129 foreign operators when planning and conducting GACAR Part 129 surveillance. Taken collectively, all safety performance information available to the GACA for each foreign air operator conducting operations within the KSA should be used to determine whether that operator should receive increased surveillance. Such determinations warrant placement of that operator on a Heightened Surveillance List (HSL). An HSL assists the GACA in its responsibility to provide

EBOOK VOLUME 12. SURVEILLANCE

safety oversight of foreign air operators to ensure that they operate safely in the KSA. The HSL provides Inspectors with a listing of GACAR Part 129 foreign operators operating to/from the KSA and serves as an internal GACA tool for Inspectors to target their surveillance. The HSL should be used to establish additional levels of surveillance, when warranted, based on specific safety performance criteria or indicators.

A. Evaluation Criteria. Criteria that should be evaluated when determining if a foreign operator should be added or removed from the HSL include:

- Foreign operators undertaking significant change of scope and type of operations (e.g., unscheduled to scheduled operations, cargo to passenger-carrying, addition or removal of aircraft type and/or major change of route structure)
- Labor disputes
- Financial crisis
- Reduction in work forces
- Merger or takeover
- Turnover in key personnel
- Relocation/closing of facilities
- Political disturbance
- Operators requiring additional surveillance due to safety concerns
- Operators banned by other ICAO member States
- Operators from ICAO member states which have safety status deficiencies as determined by the ICAO USOAP

NOTE: Any one item on this list may not be enough to require that the operator be added to the HSL. The information must be evaluated to determine if there is enough data about the air operator to add them to the list.

EBOOK VOLUME 12. SURVEILLANCE

B. Unsatisfactory Results. When an Inspector has findings that the foreign operator does not meet the international standards established by ICAO or does not comply with the applicable sections of the GACARs, the Inspector should provide the findings and issues to the flight crew/station manager and notify the responsible PI. The responsible principal inspector (PI) will maintain contact with the foreign air operator to resolve the noted findings/issues. If an additional safety concern exists or the PI does not receive a positive resolution of findings with the foreign operator, the GACA should then notify the CAA of the operator about the GACA's concerns and initiate consultations.

12.17.1.7. RAMP INSPECTIONS FOR PART 129 FOREIGN AIR OPERATORS.

A. GACA Activity Report (GAR).

1) 1622 (OP)

2) 3627 (AW)

B. General. The primary objective of a ramp inspection is to provide the GACA with the opportunity to evaluate whether the foreign operator's employees, operations, and aircraft, meet ICAO and GACA Standards, and are capable of safe operations when operating within KSA airspace. Detailed guidance currently exists for Inspectors when conducting ramp inspections of foreign air operators and is found in the Arab Safety Assessment of Foreign Aircraft Handbook (ASAFA)(as revised). This section provides supplementary guidance to Inspectors for performing ramp inspection surveillance of foreign operators to determine whether they are operating in accordance with these safety standards, and the information in this section should serve as a supplement to the primary guidance contained in the ASAFA Handbook.

C. Training. Inspectors should become familiar with the type of aircraft to be inspected before performing the ramp inspection. Only Inspectors who have completed specific training courses on how to conduct a Part 129 ramp inspection and who have completed all required on-the-job (OJT) training should conduct foreign operator inspections.

D. Planning. The surveillance of GACAR Part 129 foreign operators should be developed from the collective information available to the GACA from various safety performance indicators (IASA, USOAP, ASAFA, EU Ban List, etc.), from past GACA surveillance, from political indicators, from requests by the air operator's CAA, from the Heightened Surveillance List, from GACA's own surveillance work program, and from any other source that gives cause to

EBOOK VOLUME 12. SURVEILLANCE

question the level of safety performance of a foreign operator. When planning the ramp inspection, the Inspector should plan to be at the aircraft after all passengers have departed the aircraft and before re-boarding has begun. At no time should a ramp inspection be conducted during the loading of passengers.

- 1) To ensure that the inspection is performed adequately and in a timely manner, it is recommended that two Inspectors perform this task in exterior and interior phases.
- 2) Inspectors do not have to give Part 129 operators advance notice that a ramp inspection will be conducted. However, inspection activities should be timed so that they do not delay or interfere with passenger boarding or deplaning or impede aircraft service or catering. Ramp inspections may be conducted before a particular flight, at en route stops, or at the termination of a flight. A ramp inspection may be conducted any time an aircraft is at a gate or a fixed ramp location, provided the flight crew or station personnel are present. Inspectors should first introduce and identify themselves to the Captain and to the operator's ramp representative before performing the inspection. The captain, his or her representative, or an appropriate airline representative should remain present during the inspection. Inspectors should encourage the air operator to address all safety-related discrepancies discovered during the ramp inspection before continued flight.

E. Ramp Inspection Items. The focus of a Part 129 ramp inspection is upon the safety of the operation being evaluated. To ensure continued safe operation, Inspectors should plan to evaluate safety items located inside and outside the aircraft as well as with the flight and cabin crew members. Specific guidance on these items can be found in the evaluation form and the checklist contained in the ASAFA Handbook. Surveillance items in the ASAFA Handbook may be supplemented as needed by the GACA, depending on the safety indicators prompting the ramp inspection.

F. References, Forms, and Job Aids.

- 1) *References:*
 - GACAR Part 43, 91, 109 and 129
 - The Arab Safety Assessment of Foreign Aircraft (ASAFA) Handbook
 - ICAO SARPs contained in Annex 1, Annex 6, Annex 7, Annex 8, and Annex 18

EBOOK VOLUME 12. SURVEILLANCE

2) *Forms.*

- Aviation Safety Inspector's Credential
- ASAFA Inspection Form
- ASAFA Inspection Checklist

3) *Job Aids.*

- None

G. Procedures. The preparation and conduction of a Part 129 ramp inspection should be accomplished using the procedures contained in the ASAFA Handbook (as revised). Additionally, when performing a Part 129 ramp inspection, Inspectors should also adhere to the guidance contained in the following items:

1) *Complete the GAR report.*

2) *Grounding of Foreign Operator Aircraft.* A GACA Inspector does not have the regulatory authority to ground a foreign operators' aircraft. If the findings discovered during the ramp inspection put the safety of flight into question, then the operator's flight crew/station manager must be immediately notified and made aware to the seriousness of the safety issues. The Inspector should then immediately notify his Supervisor. The Inspector will also immediately notify the air operator's principal inspector (PI) and provide him with a list of the findings. The responsible PI will notify the air operator and, if required, the CAA of the State of Registry of the operator. The responsible PI will take the appropriate action after notifying and consulting with his Supervisor. Inspectors and PIs should carefully review the standards of ICAO Annex 8 when making a determination on un-airworthy foreign aircraft.

3) *Consider Enforcement Action.* When the analysis of the findings discloses safety issues contrary to the ICAO Standards or the GACARs, consider appropriate enforcement action. Enforcement action is the responsibility of the Inspector that discovered the violation. However, the Inspector should coordinate all findings and violations with the responsible PI and with his Supervisor.

EBOOK VOLUME 12. SURVEILLANCE

4) *Dissemination of Findings.* The results of the ramp inspection are entered into the GAR system. However, the findings are important to other safety performance monitoring systems, such as the HSL. GACA should ensure that the ramp inspection findings and data are shared with such safety performance data systems.

H. Future Activities. Based on the ramp inspection findings, determine if closer surveillance, additional enforcement, other job tasks, and/or additional coordination between the GACA, the foreign air operator, and the State of Registry of the aircraft are required to regain compliance.

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EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 18. FLIGHT RECORDER INSPECTION

Section 1. Flight Data Recorder Inspection

12.18.1.1. GACA ACTIVITY REPORT (GAR).

A. 3627 (AW) (Ramp Inspection)

B. 3628 (AW) (Spot Inspection)

12.18.1.3. Objective. This section provides guidance for inspection of the flight data recorders (FDR), to ensure that performance levels are maintained.

12.18.1.5. General.

A. Flight Time. Per General Authority of Civil Aviation Regulation (GACAR) § 91.233, if a flight recorder required by the GACAR is installed, it must be operated continuously prior to the aircraft moving under its own power until the termination of the flight when the aircraft is no longer capable of moving under its own power.

B. Data Review. A review of data extracted from FDRs has shown a significant loss of data during takeoffs, touchdowns, flights through turbulence, and unusual vibration situations. Due to these data losses, Inspectors need to ensure that an operator's inspection schedule will maintain the required FDR performance levels.

C. Use of FDRs - Regulatory Requirements. When one or more approved FDR capable of using a digital method of recording and storing data are installed, a method of readily retrieving that data from the storage medium must be available. GACAR § 91.233(d) requires that to preserve flight recorder records, flight recorders must be deactivated upon completion of flight time following an accident or incident. The flight recorders must not be reactivated before their records are retained and the operator must keep the flight recorder records for at least 60 working days or, if requested by the President or the Aviation Investigation Bureau (AIB), for a longer period.

D. GACAR Part 91 Requirements.

EBOOK VOLUME 12. SURVEILLANCE

1) To incorporate inspection requirements, GACAR § 91.452, Inspections and Recalibration of Flight Recorders, must be carried out as follows:

- An analysis of the recorded data from the flight recorders must ensure that the recorder operates correctly for the nominal duration of the recording
- The analysis of the FDR must evaluate the quality of the recorded data to determine if the bit error rate (including those errors introduced by recorder, the acquisition unit, the source of the data on the aircraft and by the tools used to extract the data from the recorder) is within acceptable limits and to determine the nature and distribution of the errors
- A complete flight from the FDR must be examined in engineering units to evaluate the validity of all recorded parameters. Particular attention must be given to parameters from sensors dedicated to the FDR. Parameters taken from the aircraft's electrical bus system need not be checked if their serviceability can be detected by other aircraft systems
- The readout facility must have the necessary software to accurately convert the recorded values to engineering units and to determine the status of discrete signals
- An annual examination of the recorded signal on the CVR must be carried out by replay of the CVR recording. While installed in the aircraft, the CVR must record test signals from each aircraft source and from relevant external sources to ensure that all required signals meet intelligibility standards;
- During the annual examination, a sample of in-flight recordings of the CVR must be examined for evidence that the intelligibility of the signal is acceptable
- An annual examination of the recorded images on the AIR must be carried out by replay of the AIR recording. While installed in the aircraft, the AIR must record test images from each aircraft source and from relevant external sources to ensure that all required images meet recording quality standards

2) When conducting the inspection, Inspectors must consider flight recorder systems to be unserviceable if there is a significant period of poor quality data, unintelligible signals, or if one or more of the mandatory parameters is not recorded correctly.

EBOOK VOLUME 12. SURVEILLANCE

- 3) A report of the annual inspection must be made available, on request, to the President or the AIB for monitoring purposes.
- 4) When recalibration of the FDR system is required.
 - For those parameters which have sensors dedicated only to the FDR and are not checked by other means, recalibration must be carried out at least every five years or in accordance with the recommendations of the sensor manufacturer to determine any discrepancies in the engineering conversion routines for the mandatory parameters and to ensure that parameters are being recorded within the calibration tolerances
 - When the parameters of altitude and airspeed are provided by sensors that are dedicated to the FDR system, there must be a recalibration performed as recommended by the sensor manufacturer, or at least every two years

E. GACAR Part 135 Requirements.

- 1) GACAR § 135.207 describes the FDR requirements for certain turbine-powered airplanes that are certificated in the normal category for which a type certificated is issued on or after January 1, 2016.
- 2) The GACAR do not contain any requirement to install an FDR in rotorcraft operated under GACAR Part 135.

F. GACAR Part 121 and 125 Requirements.

- 1) For aircraft operated under GACAR Part 121 and 125, the means of compliance with the retention of data specified in Part 91, Appendix C requires the use of flight recorders capable of recording, protecting, and retaining at least 25 hours of data.
- 2) GACAR Part 121 and 125 contain installation requirements with regard to operations of transport category airplanes. GACAR §§ 121.513(o) and 125.221(f) require that for transport category airplanes an FDR be installed of the Type A4 in accordance the provisions of Section I (a) of Appendix C to GACAR Part 91 excluding certain airplanes manufactured before 18 August 1997. The list of excluded types can be found in GACAR §§ 121.513(o)(5) and 125.221(f)(1).

EBOOK VOLUME 12. SURVEILLANCE

3) GACAR Part 121 and 125 contain additional installation requirements regarding large airplanes with a maximum take-off mass of greater than 5700 kilograms (kg). GACAR § 121.513(p)(7) and 125.221(g)(2) require installation of a Type A3 for airplanes manufactured after 11 October 1991 and before 1 January 2005, unless a Type A4 is already installed as required by GACAR §§ 121.513(o) or 125.221(f), respectively. The installations requirements are contained in GACAR Part 91, Appendix C.

G. Acoustic Underwater Locator Beacon Maintenance.

1) In order to ensure the timely activation of underwater acoustic beacons associated with FDRs, aviation safety inspectors (Inspectors) should evaluate their operator's maintenance and inspection programs to ensure that procedures for testing beacons, conducted concurrently with battery replacement, provide for functionally testing the beacons prior to replacing the old battery.

2) Operators' maintenance programs should also be evaluated to ensure that operational testing is being accomplished, consistent with the recorder or beacon 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.

12.18.1.7. PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites.

- Knowledge of the regulatory requirements of GACAR Part 91, 121, 125 and 135 (as applicable)
- Experience with the equipment being inspected

B. Coordination. This task requires coordination with the operator. This task may also require coordination with specialists from the Flight Recorder Playback Section of the AIB.

12.18.1.9. REFERENCES, FORMS, AND JOB AIDS.

A. References. GACAR Part 23, 25, 27, 29, 91, 121, 125 and 135

EBOOK VOLUME 12. SURVEILLANCE

B. Forms. GAR.

C. Job Aids. None.

12.18.1.11. PROCEDURES.

A. Perform the Inspection.

- 1) Determine the type of FDR required and the type currently in operation.
- 2) Evaluate the operator's maintenance program. Accomplish the following:
 - a) Ensure that the FDR system test program is accomplished in accordance with the manufacturer's recommendations or an approved equivalent method. The program must:
 - Describe the components of the system
 - Describe scheduled maintenance tasks with respect to the components
 - Describe required functional checks
 - b) Verify that the continuous self-monitoring and fault condition alert capabilities will detect the loss or deterioration of input signals
 - c) Ensure that the performance levels for ranges, accuracies, and recording intervals are maintained by periodic FDR bench checks and detailed analysis of recording tapes
 - d) Operators should have a separate document entitled: Data Conversion DFDR (or equivalent) which shall enable accurate conversion of recorded digital values to their corresponding engineering units or discrete states. This document must be kept current and any modifications/retrofits to DFDR system must be documented and accounted for. Review the operator's FDR, computer readouts, ramp test set readouts, and compare for the following:
 - Missing parameters
 - Data loss

EBOOK VOLUME 12. SURVEILLANCE

- Deterioration of signals
- e) Review the operator's maintenance procedures for acoustic underwater locator beacons. The manufacturer's recommendations must be closely followed, including the procedures for the battery check. A function check should be included as a task at the conclusion of the battery check.
 - f) Ensure that the digital FDR ramp equipment, if used, can detect the loss or deterioration of input signal from sensors or transducers before periodic readouts are allowed to be waived.
 - g) Ensure that the manual includes procedures that prevent the operator from destroying recorded data from the removed unit until the aircraft has accumulated the appropriate amount of operating time for that type of aircraft.
 - h) Ensure that the performance levels for ranges, accuracies, and recording intervals are maintained.
- 3) Inspect the operator's recordkeeping system. Accomplish the following:
- a) Ensure that the most recent instrument calibration and recorder correlation is being retained by either the air carrier or another person keeping the records on their premises, to include the recording medium from which this calibration is derived.
 - b) Review the operator's FDR readouts and calibration records for the following:
 - Missing parameters
 - Data loss
 - Deterioration of signals
 - c) Examine the FDR readouts to ensure that the actual data is within the ranges, accuracies, and recording intervals as specified in GACAR Part 91, Appendix C.

B. Analyze Inspection Results. Review the inspection results and discuss any discrepancies with the operator.

EBOOK VOLUME 12. SURVEILLANCE

12.18.1.13. TASK OUTCOMES.

A. GAR. Complete and file the GAR.

B. Task Completion. Completion of this task may result in a revision to the operator's maintenance program/manual.

C. Task Documentation. Document the task. File all supporting paperwork in the GACA office file.

12.18.1.15. Future Activities. Perform a follow-up as required.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 18. FLIGHT RECORDER INSPECTION

Section 2. Cockpit Voice Recorder Inspection

12.18.2.1 GACA ACTIVITY REPORT (GAR).

A. 3627 (AW) (Ramp Inspection)

B. 3628 (AW) (Spot Inspection)

12.18.2.3. OBJECTIVE. This section provides guidance in monitoring cockpit voice recorders (CVR) during spot and ramp inspections.

12.18.2.5 GENERAL. The General Authority of Civil Aviation Regulations (GARARs) require that certain aircraft be equipped with a CVR that meets approved design and installation criteria.

A. Requirements of CVR Maintenance Procedures. The aviation safety inspector (Inspector) (Airworthiness) 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.

1) Inspectors are cautioned against monitoring CVR tapes 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 Locator Beacon Maintenance.

1) To ensure the timely activation of underwater acoustic beacons associated with CVRs, maintenance Inspectors should evaluate their operator's maintenance and inspection

EBOOK VOLUME 12. SURVEILLANCE

programs to ensure that procedures for testing beacons, conducted concurrently with battery replacement, provide for functionally testing the beacons before replacing the old battery.

- 2) Operators' maintenance or inspection programs should also be evaluated to ensure that operational testing is being accomplished, consistent with the recorder or beacon 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.

12.18.2.7. PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. Experience with the equipment being inspected

B. Coordination. This task requires coordination with the operator. This task may also require coordination with specialists from the Flight Recorder Playback Section of the AIB.

12.18.2.9. REFERENCES, FORMS, AND JOB AIDS.

A. References. GACAR Part 23, 25, 27, 29, 91, 121, 125 and 135

B. Forms. GAR.

C. Job Aids. None

12.18.2.11. PROCEDURES.

A. Initiate the Inspection.

B. Monitor the CVR.

- 1) 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

EBOOK VOLUME 12. SURVEILLANCE

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.

- 2) Monitor the Cockpit Area Microphone (CAM) 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 and ground power units.

- 3) Review the operator's maintenance procedures for acoustic underwater locator beacons to ensure that the manufacturer's recommendations are closely followed, including the procedures for the battery check.

C. Analyze Results.

12.18.2.13. TASK OUTCOMES.

A. GAR. Complete and file the GAR.

B. Task Completion. Completion of this task may result in a revision to the operator's maintenance program/manual.

C. Task Documentation. Document the task. File all supporting paperwork in the GACA office file.

12.18.2.15. FUTURE ACTIVITIES.

Follow-up activities, as required.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 19. SAFETY MANAGEMENT SYSTEM (SMS)

Section 1. Background

12.19.1.1. GACA ACTIVITY REPORT (GAR).

A. (TBD)

12.19.1.3. OBJECTIVE. Determine whether the partially or fully implemented Safety Management System (SMS), as applicable continues to comply with the GACAR Part 5. Successful completion of this task results in an indication of a satisfactory or an unsatisfactory assessment.

12.19.1.5. GENERAL. The initiative for this task comes from the annual surveillance plan. SMS surveillance is conducted during planned surveillance of aviation organizations according to an appropriate schedule as determined during the planning process. They also may be conducted during spot checks initiated when risk indicators warrant. The number and scope of items to be inspected during a visit can vary according to the time available and the need indicated by ongoing information gathering.

12.19.1.7. SCOPE AND REFERENCES.

A. Scope. This surveillance guidance is for determining the ongoing acceptance of a fully or partially implemented SMS required under GACAR Part 5.

B. References. This guidance is in accordance with the following documents:

- GACA eBook Volume 2, Chapter 2, SMS Framework
- GACA eBook Volume 2, Chapter 3, SMS Phased Implementation
- GACA eBook Volume 2, Chapter 4, SMS Assessments
- International Civil Aviation Organization (ICAO) Document 9859 (as amended), ICAO Safety Management Manual (SMM)

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE

CHAPTER 19. SAFETY MANAGEMENT SYSTEM (SMS)

Section 2. Guidelines for Conducting Routine SMS Surveillance

12.19.2.1. GENERAL. The surveillance of an aviation organization's Safety Management System (SMS) should include reviewing the results of the aviation organization's internal auditing programs as well as conducting in-depth audits of the full scope of the operating SMS. It is important to determine, for example, if there are deficiencies shown from the various internal auditing programs that might be present that were not addressed in the SMS hazard identification process.

A. Surveillance of the Operating SMS. The primary tool for assessing the continuing performance of the operating SMS is the SMS Assessment Guide that is found in Chapter 4, Appendix A of this volume. The SMS Assessment Guide was developed to aid in the assessment of the performance of Aviation organizations' SMS programs in order to ensure that they continue to comply with the SMS requirements specified in General Authority of Civil Aviation Regulation (GACAR) Part 5.

1) For each required component, element and process, the SMS Assessment Guide includes:

- A brief statement of the performance objective
- A series of questions that are used to assess whether the performance expectations are being met
- A bottom line assessment question to address whether the performance objective has been achieved.

NOTE: This bottom line assessment of achieved performance is called the Performance Assessment.

2) Aviation Safety Inspectors (Inspectors) should ask each question that pertains to the component, element or process under review and document their observations. The bottom line assessment question is the most important question for assessing whether the aviation organization is meeting the safety objectives of the SMS regulatory requirements. During SMS assessments, particular attention should be given to evaluating the effective use of the

EBOOK VOLUME 12. SURVEILLANCE

Safety Risk Management and Safety Assurance processes. From these assessments, the determination is made whether the SMS is continuing to meet the minimum standards as specified in GACAR Part 5.

- 3) For those aviation organizations involved with a phased implementation, supported by an accepted implementation plan, the surveillance of the SMS will be limited to determining the performance of those components and elements in the phase currently being operated and any phases completed. In addition, an evaluation of the current or completed phase components and elements must be compared with the implementation plan to assure the SMS operation is in conformance with the implementation plan.
- 4) At the conclusion of the surveillance activity, Inspectors should debrief appropriate aviation organization personnel of the surveillance results. The debriefing should include a summary of the areas inspected and the inspector's conclusions concerning the compliance status of each area. Persons, items and areas that were found to meet or exceed standards should also be mentioned during the debriefing. Post surveillance debriefing must include an explanation of any deficiencies that were found during the review. Appropriate aviation organization personnel must be informed of any areas that will require some form of follow-up action. If it appears that a regulation has been violated, Inspectors must inform responsible aviation organization personnel that compliance enforcement will be initiated. When an Inspector is unable to debrief the appropriate aviation organization employees on any deficiencies found during an inspection, the Inspector should indicate on the inspection report that the aviation organization was not briefed deficiencies. Isolated types of deficiencies found during surveillance can often be corrected by aviation organization personnel while the review is being conducted. Such deficiencies can be adequately resolved and closed during the post surveillance debriefing. In those cases, Inspectors should record information about the deficiency and how it was corrected on the inspection report because such information is useful for trend monitoring. The preparation of the surveillance report is the final action that must be taken by the Inspectors to conclude the surveillance activity.

B. Presence of Responsible Safety Personnel During Surveillance. Inspectors should observe the level of knowledge of the aviation organization's responsible safety personnel in responding to the surveillance activity, including to questions involving their respective areas of responsibility. The level of knowledge observed can be correlated with the effectiveness of training program for employees.

EBOOK VOLUME 12. SURVEILLANCE

C. Discrepancies Found Between GACA Files and Aviation Organization Files. When a discrepancy is found between the General Authority of Civil Aviation (GACA) office records and records maintained by the aviation organization, the Inspectors must determine which set of records is current, and correct. The outdated records must be brought up to date. The Inspectors determine whether an enforcement action is necessary.

12.19.2.3. REVIEWING AGREEMENTS ON THE AVIATION ORGANIZATION'S SAFETY INDICATORS AND TARGETS.

A. A fundamental principle of effective safety management is an ongoing knowledge of the actual level of safety achieved within the system of the aviation organization. Determining the achieved level of safety and evaluating whether this level of safety is acceptable, depends upon identifying, measuring and tracking safety indicators relative to safety targets established.

B. It is important for the GACA, as part of the Inspector's oversight responsibilities, to establish agreements with aviation organizations about their safety performance indicators, safety performance indicator values to be used, safety performance target values as goals, and an action plan to track indicator values and actions to take to achieve target goals.

C. In order to structure an agreement with a particular aviation organization on safety performance indicators, values and targets to be used, the individual operational environment for that aviation organization must be carefully considered.

D. The performance of the aviation organization related to the agreed upon safety indicators, values and goals must be tracked on a continual basis, and the tracking and agreement must be reviewed periodically as a part of inspector oversight surveillance activities.

E. The establishment of the aviation organization's safety indicators, values and goals is accomplished by first determining the important, measureable indicators in the aviation environment that indicate safety has been compromised. For example, for the environment of an Air Operator Certificate (AOC) holder, useful safety performance indicators can include, but will not be limited to, the following: fatal accidents; serious incidents; runway excursions; ground collision events; or recurring history of regulatory noncompliance. When the appropriate indicators have been chosen, a current state of the number or rate of occurrence for each of them must be determined, by historical record, if possible. When the current, or historical, values for the chosen indicators have been established, reasonable goals (target values) for the improvement of the number or rate, as appropriate, can be established. Policies and procedures

EBOOK VOLUME 12. SURVEILLANCE

that will lead to the improvement goals must then be established and implemented.

F. The GACA agreement with the aviation organization's safety indicators, values and goals is accomplished, first, by the Inspector becoming familiar with and carefully analyzing the details of the aviation organization proposal. The Inspector must determine that the safety indicators, values and goals are appropriate for the environment of the aviation organization, that they are reasonable and achievable goals, that the policies and procedures implemented to achieve them appear effective, and that sufficient resources have been committed to assure their achievement. The Inspector must periodically review the details of the agreed upon safety indicators, values and goals to assure they remain appropriate, that progress toward the goals is evident, and to determine if there have been changes in the aviation organization's environment that require changes to the agreement.

G. The GACA Inspectors must become familiar with the discussion of safety indicators and values and safety targets and values in the current edition of the International Civil Aviation Organization (ICAO) Safety Management Manual, Doc 9859.

12.19.2.5. CONDUCTING SURVEILLANCE. Most often, during surveillance activity to determine ongoing SMS conformity and effective operation, specific components and elements will be the focus, rather than the full scope of SMS framework elements. Therefore, the record produced for a specific SMS surveillance activity must clearly indicate which elements were addressed and the surveillance results for those elements. All observations should be summarized according to whether the performance objectives of the observed SMS components, elements and processes have been achieved.

12.19.2.7. PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. This task requires:

- Knowledge of the regulatory requirements of GACAR Part 5 and GACA policies
- Qualification as a GACA Inspector

12.19.2.9. REFERENCES AND JOB AIDS.

A. References.

EBOOK VOLUME 12. SURVEILLANCE

- GACAR Parts 1 and 5
- eBook Volume 2, SMS
- eBook Volume 13, Compliance and Enforcement

B. Job Aids.

- SMS Assessment Guide, eBook Volume 2, Chapter 4, Appendix A
- SMS Acceptance Criteria, eBook Volume 2, Chapter 5, Appendix A
- Sample letters

12.19.2.11. PROCEDURES.

A. Conduct Pre-Inspection Activities.

- 1) Determine the need for the inspection.
 - a) Is the inspection scheduled on the annual surveillance plan?
 - b) Is the inspection the result of risk indicators or complaints?
 - c) Is the inspection part of the phased implementation of the SMS?
- 2) Determine if the inspection is to be conducted with or without notice to the aviation organization.
 - a) If the inspection is to be conducted with notice to the aviation organization, notify the aviation organization in writing of the day, time, and nature of the inspection (Figure 12.19.2.1).
 - b) If the inspection is to be conducted without notice to the aviation organization, schedule the day and time.
- 3) Review the aviation organization's file for complaints, previous enforcement history, accident/incident history, previous facility inspections and surveillance reports.

EBOOK VOLUME 12. SURVEILLANCE

B. Open GAR.

C. Conduct SMS Surveillance. Determine scope and which specific SMS framework components, elements or processes will be the subject of the surveillance to be conducted.

D. Follow Procedures for a Satisfactory SMS Assessment. If the SMS assessment is satisfactory, indicate the outcome in a letter to the provider (Figure 12.19.2.2).

E. Follow Procedures for an Unsatisfactory Facility Inspection.

1) If the surveillance result was unsatisfactory when conducted as part of the phased implementation of the SMS, inform the applicant immediately of the discrepancies.

- a) Advise the aviation organization which specific performance objectives have not been achieved.
- b) Confirm the findings in writing (Figure 12.19.2.2), including a date for correction of deficiencies.
- c) Note the outcome on the job aid.
- d) Ensure that the job aid is included in the phased implementation report.

2) If the surveillance was unsatisfactory when conducted as part of post-certification oversight, note the outcome on the job aid.

- a) Place the job aid in the GACA office file on the aviation organization.
- b) Document all non-compliance findings and proceed with compliance enforcement & resolution (see Volume 13).

F. Conduct Post-Surveillance Actions. Discuss any findings discovered during the surveillance with the Aviation organization. Bring areas that need improvement to the attention of the aviation organization. Compliment the areas that exceed certification requirements.

G. Close GAR.

12.19.2.13. TASK OUTCOMES.

EBOOK VOLUME 12. SURVEILLANCE

A. Complete GAR Record.

B. Completion of this task can result in the following:

- Satisfactory inspection
- Communicate concerns/findings to the relevant GACA management
- Follow-up inspection for a particular discrepancy
- If enforcement action is required, follow the guidance found in Volume 13, Compliance Enforcement & Resolution of Identified Safety Deficiencies

12.19.2.15. FUTURE ACTIVITIES. Based on inspection findings, determine if increased surveillance, additional enforcement, other job tasks, and/or additional coordination is required between the Inspector and their manager.

Figure 12.19.2.1. Letter Informing Aviation Organization of Surveillance Visit

GACA Letterhead

[date]

[Aviation organization name and address]

Dear [name]:

Inspectors from this office will conduct an assessment of your SMS at [time] on [date]. The purpose of this assessment is to determine whether your SMS is operating in accordance with GACAR Part 5.

Enclosed is a copy of the assessment job aid for your review. This job aid will be used to assist us in conducting the assessment. If you have any questions, please contact this office [telephone number].

Sincerely,

[Inspector's signature]

EBOOK VOLUME 12. SURVEILLANCE

Figure 12.19.2.2. Letter Confirming Results of Assessment Visit

GACA Letterhead

[date]

[Aviation organization name and address]

Dear [name]:

The results of the assessment of your SMS conducted on [date] are as follows:

For the results requiring corrective action, please submit a corrective action plan for those items no later than [Date].

Sincerely,

[Inspector's signature]

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE**CHAPTER 20. PRODUCTION CERTIFICATE HOLDERS****Section 1. To Be Determined**

NOTE: This guidance to be developed at a later date.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE**CHAPTER 21. AERODROMES****Section 1. TBD**

NOTE: This guidance to be developed at a later date.

EBOOK VOLUME 12. SURVEILLANCE

VOLUME 12. SURVEILLANCE**CHAPTER 22. AIR NAVIGATION SERVICE PROVIDERS****Section 1. TBD**

NOTE: This guidance to be developed at a later date.