

NOTICE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

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Cancellation
Date: 7/23/05

SUBJ: EVALUATION OF PART 121 AIR CARRIER OUTSOURCED MAINTENANCE ARRANGEMENTS AND ORGANIZATIONAL PROCESSES BY NON-AIR TRANSPORTATION OVERSIGHT SYSTEM (ATOS) CERTIFICATE-HOLDING DISTRICT OFFICES (CHDO)

1. PURPOSE. This notice outlines a special emphasis surveillance program to evaluate Title 14 of the Code of Federal Regulations (14 CFR) part 121 air carrier outsourced maintenance management and oversight. The special emphasis surveillance program will begin during the remainder of fiscal year (FY) 2004 and be completed during FY 2005. The evaluation has two objectives.

a. Principal airworthiness inspectors will verify that their assigned certificate holders have adequate provisions to manage and oversee organizations with which they have made arrangements to perform maintenance in accordance with 14 CFR part 121, section 121.363 (hereafter referred to as “outsourced maintenance”).

b. Principal airworthiness inspectors will validate the overall effectiveness of their assigned certificate holders’ management and oversight of outsourced maintenance through evaluation of certificate holders’ records and onsite surveillance by using system safety tools.

2. DISTRIBUTION. This notice is distributed to the division level in the Flights Standards Service in Washington headquarters; to the branch level in the regional Flight Standards divisions; to the Flight Standards District Offices; and to the Regulatory Standards Division at the Mike Monroney Aeronautical Center. This notice is also distributed electronically to the division level in the Flight Standards Service in Washington headquarters and to all regional Flight Standards divisions and district offices. This information is also available on the Federal Aviation Administration’s (FAA) Web site at:

<http://www.faa.gov/avr/afs/notices/8300/N8300-115.doc>.

3. BACKGROUND. Holders of certificates issued under part 121 may make arrangements with other individuals or organizations to perform maintenance on the certificate holders’ airplanes in accordance with part 121, section 121.363. While properly managed outsourcing of maintenance can be a safe, effective, and efficient means of accomplishing required maintenance actions, the certificate holder retains the responsibility for the airworthiness of its airplanes. Furthermore, the certificate holder must ensure that it, and those with whom it makes arrangements to perform maintenance activities, have adequate organizations (part 121, section 121.365(a)), competent personnel and adequate facilities (part 121, section 121.367(b)), and that all maintenance is performed in accordance with the certificate holder’s manual (part 121, section 121.367(a)). Certificate holders’ Continuing Analysis and Surveillance Systems (CASS) must also be able to validate the performance and effectiveness of providers of outsourced maintenance activities. A certificate holder’s failure to exercise effective

management and oversight of outsourced maintenance activities could result in increased levels of risk. This special emphasis program is, therefore, first in a series of actions that Flight Standards is taking to ensure that part 121 certificate holders are meeting these important responsibilities.

NOTE: FAA Order 8300.10, Airworthiness Inspector's Handbook, volume 2, chapter 69, paragraph 5, contains additional reference material defining the relationships between air carrier certificate holders and outsourced contract maintenance facilities.

4. ACTION. Principal airworthiness inspectors, individually or as a team, will accomplish the steps outlined in the following paragraphs for all part 121 air carriers.

NOTE: A process map depicting the processes of paragraph 4 is available in Appendix 1. Additional explanatory information is provided in Appendix 2.

a. Evaluation of the Certificate Holder's Operational Environment.

(1) Evaluate the air carrier'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.

(2) Evaluate resources, such as available maintenance audit personnel and capabilities of the carrier's CASS with respect to outsourced maintenance oversight. Data previously collected to evaluate the CASS program can and, if available, should be included in the evaluation of the certificate holder's management and oversight of outsourced maintenance.

(3) Use system safety assessment tools to accomplish this evaluation.

(a) Principal airworthiness inspectors will, as necessary, review risk indicators in system 8 of the Surveillance and Evaluation Assessment Tool (SEAT). Surveillance and Evaluation Program (SEP) tools may be obtained online at <http://cset.faa.gov/sep.htm>.

b. Evaluation of the Certificate Holder's System Design.

(1) Evaluate the air carrier's system for contracting, management, and oversight of maintenance contractors, including audit programs of its maintenance contractors. The ATOS Safety Attribute Inspection (SAI) Data Collection Tool (DCT) for Element 1.3.7, Outsource Organization, will be used as guidance for this evaluation. Additionally, certificate holders should be made aware of the contents of the DCTs and of Advisory Circular (AC) 120-79, Developing and Implementing a Continuing Analysis and Surveillance System.

(a) Two sets of the tools will be distributed to non-ATOS principal airworthiness inspectors via e-mail. The short form only includes the questions and instructions. The longer form contains additional information in the form of job task items (JTI). Additional copies of the DCTs can be obtained from the ATOS Web site, http://www.faa.gov/avr/afs/atos/p_p/jobaids.htm. On this page, select the tools under the heading "Vers. 1.X."

(b) JTIs contain examples of what to observe to satisfy the intent of the questions. JTIs also include references from regulations and FAA policy documents. JTIs are provided to assist in completing the DCT questions, but they do not require additional responses.

(c) Using the SAI as guidance, review the carrier's manuals to become familiar with and to evaluate the adequacy of the certificate holder's program for management and oversight of outsourced maintenance.

(d) Inspectors should also provide copies of the SAI to their assigned certificate holders for their use and self-evaluation.

(2) Record the results of the evaluation and any discrepancies found in the Program Tracking and Reporting Subsystem (PTRS).

(a) Principal airworthiness inspectors will use the SAI as guidance and as a job aid and will record information that they deem to be essential under activity code 3617 or 5617 in the PTRS in accordance with standard PTRS practices. Inspectors will record information that supports conclusions (positive or negative) about the system in the PTRS "Comments" section. Comments associated with "No" answers to DCT questions will include the question number at the beginning of the comment narrative.

(b) Essential elements of the system, as outlined in the SAI, must be validated through collection and recording of objective evidence that the system is properly designed and well managed. The objective is to evaluate the effectiveness of the certificate holder's system. PTRS records of inspections should provide clear, objective, factual statements of what was observed and which area in the SAI was evaluated.

NOTE: The target for completion of SAIs is December 31, 2004. Inspections accomplished in accordance with this notice after September 30, 2004 may be credited to FY 2005 NPG R-item requirements.

c. Evaluation of the Certificate Holder's System Performance. Validate the performance of the carrier's outsourced maintenance management and contractor oversight through field surveillance at the carrier'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 certificate holder's management and oversight of those maintenance activities. Where required, principal airworthiness inspectors will request geographic support for field visits of selected facilities.

NOTE 1: When applicable and practicable, coordinate surveillance plans and results with principal airworthiness inspectors responsible for contractor repair stations.

NOTE 2: Where FAA resource constraints preclude an adequate evaluation of the certificate holder's performance due to problems such as lack of travel funds or unavailability of geographic support, principal airworthiness inspectors should document these conditions

on an FAA Certificate Management Risk Worksheet. These worksheets and associated instructions can be obtained from: <http://cset.faa.gov/sep.htm>.

(1) Selection of facilities to visit should include those facilities that provide the highest volume of maintenance activity for the carrier, perform the most critical maintenance, or show other indications of risk (e.g., past performance problems, enforcements, problems recorded by inspectors from other CHDOs). The Safety Performance Analysis System (SPAS) provides records of observations made by inspectors from other CHDOs. Where individual CHDOs lack resources to visit distant or foreign maintenance facilities, regions may find it advantageous to form joint teams to evaluate facilities that serve a number of carriers in the region.

(2) Special emphasis will be placed on maintenance providers' compliance with all provisions of the air carrier's maintenance instructions, training of maintenance personnel, and the air carrier's onsite management and oversight of maintenance activities performed by contractors.

(3) These management and oversight functions include not only the periodic audits through the CASS but day-to-day management and supervision of maintenance activities as well. Particular attention will also be given to required inspection item (RII) tasks.

NOTE: Surveillance of selected facilities will be completed by September 30, 2005. Facility inspections accomplished in accordance with this notice after September 30, 2004 may be credited to FY 2005 NPG R-item requirements.

(4) Use the ATOS Element Performance Inspection (EPI) DCT for Element 1.3.7, Outsource Organization, as guidance for inspections of individual facilities and evaluations of system performance.

(5) EPI DCTs will be distributed or otherwise obtained in the same manner as SAIs. Refer to paragraph 4.b.(1)(a) for instructions for obtaining additional copies of these tools.

(6) Principal airworthiness inspectors will use the EPI as a job aid and record inspection results in the PTRS under activity codes 3640 and 5640, in accordance with standard PTRS practices. Inspectors will use the "Affiliated Designator" data field where appropriate when completing PTRS transmittals, or list the name of the maintenance provider in the "National Use" block for uncertificated facilities.

(7) PTRS records of deficiencies should provide clear, objective, factual statements of what was observed and which area in the EPI was being evaluated. Inspectors will record information that supports conclusions (positive or negative) about the system in the PTRS comments section. Comments associated with "No" answers to DCT questions will include the question number at the beginning of the comment narrative.

d. Risk Analysis and Assessment. Problems with system design, resource management, and system performance will be transferred to a SEP SEAT Risk Worksheet. Use these tools to document and track analysis and action plans on identified problem areas.

e. Preparing and Recording Risk Analysis, Assessment, and Action Plans. Where risk analysis indicates a need, principal airworthiness inspectors will prepare action plans and will record risk analysis, assessment, and action planning in the “Action” section of the SEAT Risk Worksheet.

(1) Instructions for completing these tools are contained in SEP work instructions, which are available online at <http://cset.faa.gov/sep.htm>.

(2) Actions may include additional surveillance, certificate management actions, letters of concern, organizing safety action teams (SAT), or enforcement.

5. DISPOSITION.

a. Continued oversight of air carriers’ outsourced maintenance arrangements and organizational processes will be accomplished through future versions of FAA Order 1800.56, National Flight Standards Work Program Guidelines, current edition.

b. To facilitate implementation of this notice and to provide assistance for principal inspectors within each region, points of contact (POCs) within each regional office have been identified. POCs are as follows:

AGL – Charles Hamilton or manager, AGL-230
ACE – Raymon Taylor or manager, ACE-230
ANM – Greg Young or manager, ANM-240
AWP – Michael K Woodward or manager, AWP-240
AEA – Peter Bono or manager, AEA-230
ASW – Karl W. Young or manager, ASW-230
ASO – Chris Collins or manager, ASO-290
ANE – William Williams or manager, ANE-230
AAL – Mark N. Wilson, AAL-230

c. As an alternate POC, principal inspectors may also contact Martin Bailey in the Flight Standards Certification and Surveillance Division (AFS-900).

NOTE: During FY 2005, AFS-900 will conduct a followup assessment of the methods, practices, and results of the activities outlined in this notice. Data collected from the assessment will be used to improve Flight Standards policies, practices, and training with regard to the use of system safety tools by non-ATOS CHDOs and evaluate policies related to outsourced maintenance.

/s/John M. Allen for

James J. Ballough
Director, Flight Standards Service

APPENDIX 2. USING SYSTEM SAFETY METHODS TO EVALUATE OUTSOURCED MAINTENANCE MANAGEMENT AND PERFORMANCE

1. Components of Oversight. There are two primary components to systematic oversight of a safety-related system or program: System validation and risk targeting. Both are essential to risk management. To effectively manage risk, certificate holders have the responsibility to design systems that control risk factors in their operational environment and must consistently use the systems that they design.

a. System validation is used to determine if the certificate holder has provided a system to manage and oversee its network of maintenance providers. This evaluation must consider how well the carrier's management and oversight system accounts for the operator's individual operational environment and the risks associated with that environment. The evaluation must also consider the design and organization of the system or program as well as whether or not adequate resources are applied to the process. When we validate a system, we determine if the system is properly configured, staffed, and provided with resources to control risks in the environment. Latent conditions such as deficiencies in management policies or resource shortfalls may exist that result in unsafe conditions at a later time because of the certificate holder's failure to provide an adequate management or oversight system.

b. In the case of risk targeting, problem areas have been identified that need attention. Risk targeting involves conducting activities that are needed to gain additional information to better define the problem, to take necessary action or to evaluate the effectiveness of the certificate holder's corrective action. Once an initial evaluation of the certificate holder's system has been conducted, any existing risk factors must be identified and documented. These may include missing elements in the system or elements that fail to perform as intended. Principal airworthiness inspectors must then target appropriate action to mitigate these risk factors. Actions may include additional surveillance to clarify the situation, certificate management (such as modifying operations specifications), or enforcement (such as letters of correction).

c. Each of the two components can be further broken down into activities, listed below. Each of these activities will be discussed in the following paragraphs.

(1) System Validation Activities.

- (a)** Evaluating the Operational Environment.
- (b)** Evaluating the System Design.
- (c)** Validating System Performance.

(2) Risk Targeting Activities.

- (a)** Risk Analysis and Assessment.
- (b)** Targeting Activity.

2. Evaluating the Operational Environment. Air carriers operate in a unique and rapidly changing environment. Each carrier must control risk through design and implementation of risk controls that are based on a careful analysis of the carrier's current environment. This is a fundamental air carrier

responsibility. The Federal Aviation Administration (FAA), as a secondary risk control, validates that the carrier is meeting this responsibility for risk control.

a. Many of the issues that add complexity and stress to a carrier's environment concern change. The carrier's risk controls must, therefore, be continually updated. The following are some areas where change can stress the carrier's safety systems regarding outsourcing of maintenance:

- (1) Change in fleet size, composition, or utilization;
- (2) Change in maintenance arrangements (e.g., changing from in-house to outsourced);
- (3) Change in management structure;
- (4) Financial or labor problems;
- (5) Change in operations (e.g., route structures or types of service); and
- (6) Change in code-sharing arrangements with other carriers.

b. This evaluation sets a context for evaluating the carrier's systems and programs. It identifies issues that may add complexity or difficulty to the carrier's outsourced maintenance management and oversight activities and, therefore, risks that the carrier must control.

c. A good management and oversight program for outsourced maintenance is essential, but the program will not function effectively unless adequate resources are applied to it. Principal airworthiness inspectors should evaluate the areas listed below and any other resource issues that could potentially impair the carrier's ability to oversee outsourced maintenance activities.

- (1) Size of the quality assurance (QA) department;
- (2) Number of available inspectors versus number, location, and complexity of facilities overseen;
- (3) Available documentation and recordkeeping of QA activities;
- (4) Available engineering and analytical personnel;
- (5) Information technology (IT) resources for data collection and analysis specified in the carrier's program; and
- (6) Training of QA and required inspection item (RII) personnel.

3. Evaluating System Design. System design concerns the organizational structure, staffing, procedures, and infrastructure planning of the certificate holder's organization. The evaluation should focus on six attributes: Responsibility, authority, procedures, controls, process measures, and interfaces. Information on system design and relationships between air carriers and contract maintenance providers is primarily contained in air carrier and repair station manuals, but can also be found in organization charts, maintenance schedules, and contracts. FAA Order 8300.10, Airworthiness Inspector's Handbook,

current edition, volume 2, chapter 69, contains additional material on evaluating contracts, issuing operations specifications (OpSpecs), and evaluating certificate holder's manuals. The Air Transportation Oversight System (ATOS) Element 1.3.7 Safety Attribute Inspection (SAI) provides guidance for conducting system design evaluations.

4. Evaluating System Performance. Sampling of representative contract maintenance facilities will be conducted with emphasis on validating compliance with the designed program on the part of both air carrier and contractor personnel. These inspections will also be used to validate the effectiveness of the procedures, controls, and process measures that are designed into the program. The ATOS Element 1.3.7 Element Performance Inspection (EPI) provides guidance for conducting inspections to validate system performance.

a. Analyses that support decisionmaking should use data that are representative of the air carrier's systems and processes. This requires that enough valid data are 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 a large number of individual observations may fail to provide a clear picture of the certificate holder's operations if they do not represent the full range of its locations, shifts, and work activities. Further assistance on sampling can be obtained by contacting the Flight Standards Safety Analysis Information Center (FSAIC) at AFS-900.

b. Before designing a surveillance plan, principal airworthiness inspectors must verify that the OpSpecs, paragraph D091, and the list of authorized vendors in the carrier's manual required in accordance with Title 14 of the Code of Federal Regulations (14 CFR) part 121, section 121.369(a) are complete and accurate.

c. The completed surveillance plan will provide a representative sample of repair stations that perform substantial maintenance and other facilities, both certificated and noncertificated, 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 carrier's program.

5. Risk Analysis and Assessment. Any issues or concerns related to the carrier's ability to manage its network of maintenance contractors will be recorded in the appropriate risk management tool (Module 7/8 for ATOS, Surveillance and Evaluation Program (SEP) Risk Worksheets for non-ATOS) for tracking and action planning. If possible, the principal airworthiness inspectors will give the air carriers annotated SAIs and/or EPIs to help them to understand expected performance. The principal airworthiness inspector should emphasize that the air carrier's responsibility for risk management is fundamental.

a. The combined results of evaluations of system design, resource management, and system performance will be evaluated in context to determine if any safety concerns exist with the carrier's outsourced maintenance management and oversight program.

b. During this system evaluation and risk analysis, results of the air carrier's Continuing Analysis and Surveillance System (CASS) inspections will be reviewed, particularly about the carrier's vendor audit program.

c. The identified areas of risk may show a need for inspectors to evaluate other ATOS elements, such as the following:

- (1) 1.3.1 Maintenance Program.
- (2) 1.3.2 Inspection Program.
- (3) 1.3.10 Parts/Material Control/SUP.
- (4) 1.3.11 Continuing Analysis and Surveillance System.
- (5) 1.3.24 Coordinating Agencies for Suppliers Evaluation (CASE).

d. The Safety Performance Analysis System (SPAS) repair station profile also shows summaries of data submitted on part 145 repair stations by inspectors from the repair station's certificate-holding district office (CHDO) and other air carrier inspectors. This data provides additional information on performance and risk associated with individual facilities.

6. Targeting Activity. Action plans will be developed in accordance with ATOS or SEP guidance, as appropriate, with focused surveillance and certificate management activities that directly address the issues found. Principal airworthiness inspectors track the carrier's corrective actions on areas of identified risk and, where necessary, elevate concerns to appropriate levels of FAA management (e.g., office, region, headquarters).

7. Continuous Monitoring. The process of risk management is continuous. The certificate holder must continuously update its programs and allocate its resources and activities to meet changes in its operating environment. Principal airworthiness inspectors must emphasize this continuing responsibility to air carrier management personnel.