
Office of Inspector General

Audit Report

FAA HAS NOT EFFECTIVELY IMPLEMENTED REPAIR STATION OVERSIGHT IN THE EUROPEAN UNION

Federal Aviation Administration

Report Number: AV-2015-066

Date Issued: July 16, 2015





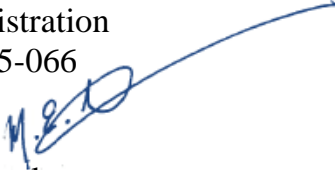
Memorandum

**U.S. Department of
Transportation**

Office of the Secretary
of Transportation
Office of Inspector General

Subject: **ACTION:** FAA Has Not Effectively Implemented
Repair Station Oversight in the European Union
Federal Aviation Administration
Report Number AV-2015-066

Date: July 16, 2015

From: Matthew E. Hampton 
Assistant Inspector General
for Aviation Audits

Reply to
Attn. of: JA-10

To: Federal Aviation Administrator

With the expansion of international air service, air carriers in the United States increasingly rely on foreign repair stations to fulfill their maintenance needs. This is particularly true in Europe, where more than 400 repair stations certificated by the Federal Aviation Administration (FAA) perform work on U.S.-registered aircraft and components. Since 2003, we have recommended that FAA strengthen its oversight of air carriers' contracted maintenance providers by developing a comprehensive, standardized approach to repair station oversight and targeting inspector resources based on risk assessments. The United States and the European Union (EU) signed an aviation safety agreement on May 1, 2011, which further leverages FAA's inspector resources by allowing foreign authority safety inspectors to oversee repair stations in the EU on FAA's behalf. With this agreement, the United States expanded its aviation safety partnership from 3 countries in 1999 to 18 countries today. While this agreement minimizes duplicative oversight and relieves FAA inspectors from performing mandatory, annual inspections overseas, FAA still retains its responsibility to ensure its foreign repair stations comply with U.S. regulations.

We conducted this audit at the request of Representative Peter DeFazio, Ranking Member of the House Committee on Transportation and Infrastructure and Representative John Garamendi. The Congressmen emphasized the importance of effective and proactive FAA oversight and expressed concerns over how risks, corrective action plans, and follow-up assessments are shared and coordinated among various aviation authorities under the new agreement.

Accordingly, our audit objectives were to (1) evaluate the effectiveness of FAA's process to transfer oversight of EU repair stations to national aviation authorities and (2) assess the Agency's process for monitoring FAA-certificated repair stations operating under the U.S./EU Aviation Safety Agreement to ensure they meet Agency standards.

We conducted this review in accordance with generally accepted Government auditing standards. To conduct our work, we visited FAA's Headquarters; the Eastern Region Flight Standards Division Office in Jamaica, New York; the International Field Office (IFO) in Frankfurt, Germany; and the Flight Standards District Office (FSDO) in San Antonio, Texas; the European Aviation Safety Agency (EASA) Headquarters in Cologne, Germany; nine European Aviation Authorities; and two repair stations in Belgium and Malta. Exhibit A further details our scope and methodology, and exhibit B lists all entities contacted or visited.

RESULTS IN BRIEF

FAA met the agreement's May 1, 2013, deadline to transfer oversight of 219 EU repair stations¹ to foreign aviation authorities but did so without ensuring they were fully prepared to accept their new roles. For example, FAA did not follow its process to effectively assess foreign authorities' capabilities to assume oversight. Foreign authorities completed self-assessments to demonstrate their ability to perform surveillance on FAA's behalf; however, seven of the eight assessments we reviewed contained incomplete or unclear information, and FAA did not ensure questions related to inspector training, workforce, and resources were resolved prior to transferring oversight responsibilities. Yet, FAA concluded that all authorities met requirements to perform oversight. Further, FAA did not ensure that foreign authority inspectors completed their initial training on the agreement before transferring its oversight authority primarily because the agreement is unclear on notification procedures. These shortcomings could have a negative impact for FAA as the United States seeks to expand this agreement to other countries.

Training, procedural, and data weaknesses hinder FAA's ability to monitor EU-based repair stations. First, FAA did not train its inspectors on how to conduct inspections of aviation authorities or provide written guidance on how to complete the new inspection forms. This has led to inspection reports that are inaccurate or are insufficient to validate repair station and foreign authorities' compliance with

¹ This is the total number of repair stations in the 15 EU countries that were transferred to the new bilateral aviation safety agreement. Repair stations in the remaining three countries—France, Germany, and Ireland—were already under individual aviation safety agreements with the United States prior to the start of the new agreement, but they transitioned to the new agreement under separate procedures and timeframes.

FAA standards. FAA inspectors also assumed new roles following the transfer process, but FAA headquarters did not provide them with guidance on what these new roles would entail. While FAA and EASA provided joint training to foreign authority inspectors on what FAA-compliant repair station manuals must contain, inspectors approved manuals that did not comply with FAA standards. In addition, FAA procedures and checklists for conducting inspections² at foreign authorities and repair stations are less robust than EASA's procedures and checklists used for inspecting FAA offices³ and U.S.-based repair stations. For example, FAA offices in the United States are required to provide EASA with corrective action plans to address discrepancies identified during EASA compliance inspections within 90 days, but foreign authorities do not have a corresponding time requirement to submit corrective action plans to FAA. Finally, FAA now has less inspection data on repair stations under the new agreement; in part, because foreign authorities only provide inspection results to FAA for those areas in which FAA requirements differ from EASA's. As a result, FAA cannot accurately assess the overall quality of repair station operations or adequately plan and conduct repair station risk assessments.

FAA's inability to fully evaluate foreign authorities' capabilities, coupled with inspector training weaknesses, process differences, and data limitations, hinders FAA's assurance that repair stations in the European Union receive quality oversight and maintain aviation safety. Since this new agreement is still in its early implementation stage, we are making recommendations to FAA to improve its processes for monitoring foreign aviation authorities and repair stations operating under this and future bilateral agreements.

BACKGROUND

Since 1996, the United States has entered into joint aviation safety agreements—known as bilateral agreements—with France, Germany, and Ireland as a way for FAA and foreign government authorities to accept each other's inspection findings and approvals. On May 1, 2011, these agreements were incorporated into a much broader agreement called *The Agreement between the United States of America and the European Community on Cooperation in the Regulation of Civil Aviation Safety* (hereafter called “the Agreement”). Through the Agreement, the United States and the European Union determined that many of their civil aviation standards, rules, and practices are compatible, allowing FAA and EASA to accept each other's standards, systems, and approvals relating to repair stations located in the United States and Europe. The Maintenance Annex Guidance (hereafter called

² These inspections are also known as Sampling Inspections. FAA and EASA conduct periodic sampling inspections to verify that aviation authorities and repair stations comply with the terms of the bilateral aviation safety agreement.

³ The term “FAA offices” is used throughout this report to mean Flight Standards District Offices which are responsible for monitoring U.S.-based repair stations' compliance with European regulations.

“the Guidance”) is considered the “working instructions,” which explain how FAA, EASA, and foreign authority inspectors will implement the Agreement.

The Agreement now encompasses 18 EU countries and, unlike previous agreements, is the first bilateral aviation safety agreement that is multinational in its scope. Foreign authorities now inspect EU-based repair stations that perform maintenance on U.S.-registered aircraft and components on FAA’s behalf. EASA is the regulatory authority that represents foreign authorities on technical issues related to the Agreement and ensures that U.S.-based repair stations continue to meet the requirements of the Guidance by conducting periodic inspections. Further, the Agreement provides for the inclusion of future member states. Also, with the passage of the Transportation Security Administration’s repair station security rule⁴ in January 2014, foreign authorities will now process new applications and inspect FAA-certificated repair stations in the EU for FAA.

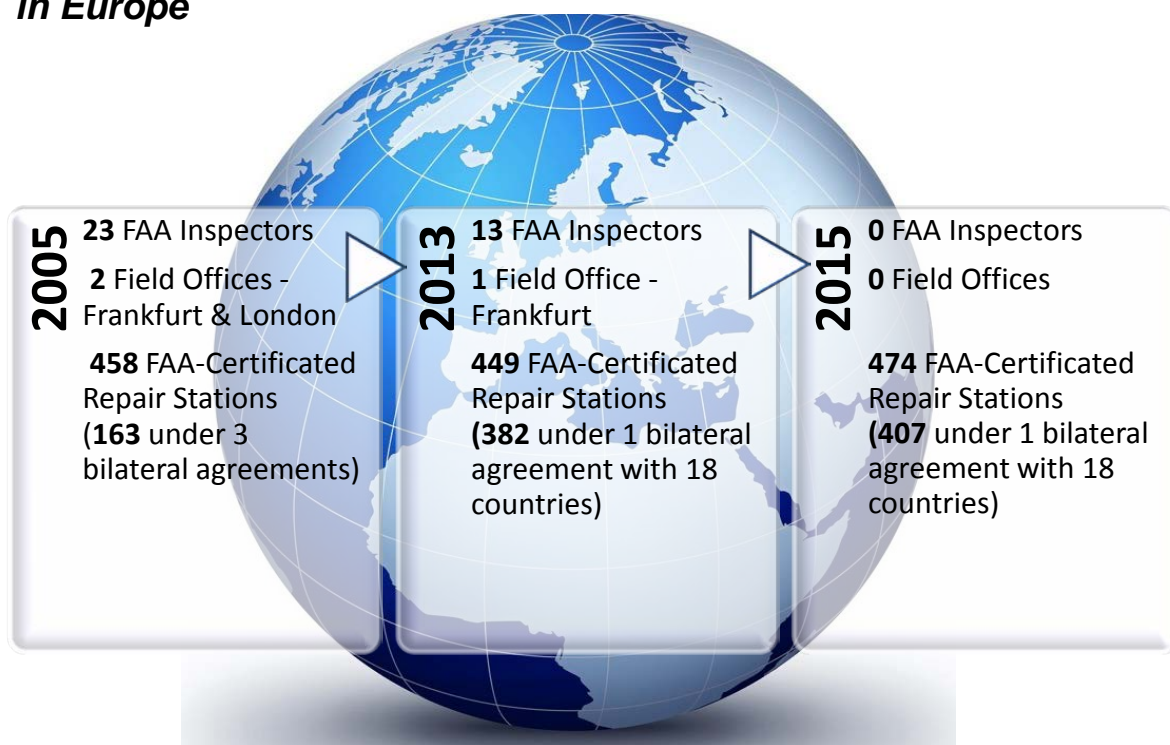
While FAA no longer performs certification and renewal surveillance activities at EU-based repair stations, it has other opportunities to review them for compliance. For example, once every 18 months FAA can sample a foreign authority and the repair stations overseen by that authority to evaluate compliance with the Guidance. However, these inspections only focus on areas where FAA regulations differ from EASA’s regulations.⁵ FAA may also conduct independent inspections of repair stations or a foreign authority when it becomes aware of a safety-related issue.

Prior to implementing the Agreement, FAA inspectors assigned to two field offices in London and Frankfurt were responsible for conducting inspections of all FAA-certificated repair stations in Europe (except those covered by separate bilateral agreements in France, Germany, and Ireland). Under this new Agreement, foreign authority inspectors in 18 countries are responsible for inspecting 407 FAA-certificated repair stations. FAA closed its London office in 2011 and recently announced it will close the Frankfurt office this year and reassign its inspectors to stateside inspection offices. In the future, FAA inspectors will have to travel to Europe to conduct reviews to evaluate whether foreign authorities and EU-based repair stations continue to meet the requirements of the Agreement. Figure 1 below shows how FAA’s inspector presence in Europe has diminished within the last 10 years.

⁴ *Aircraft Repair Station Security*, Final Rule, 79 Fed. Reg. 2119-2143 (January 13, 2014) (codified at 49 CFR part 1554). Prior to passing this rule, FAA was barred from processing new repair station applications.

⁵ FAA has 12 regulatory requirements that do not correlate to EASA’s regulatory requirements (these are termed FAA Special Conditions and are listed in exhibit C). EU-based repair stations must comply with these 12 requirements to be eligible for an FAA certificate.

Figure 1. FAA's Diminishing Inspector and Oversight Presence in Europe



Source: FAA & OIG analysis

FAA DID NOT FULLY ASSESS AND VERIFY FOREIGN AUTHORITIES' OVERSIGHT CAPABILITIES

FAA transferred direct oversight of EU repair stations to foreign authorities within timeframes specified in the Agreement. However, FAA's initial assessment of foreign authorities' capabilities was incomplete. FAA also did not receive assurance that foreign authorities completed inspector training that should have been accomplished prior to transferring inspection authority.

FAA Met Timeframes To Transfer Oversight Responsibility to Foreign Authorities

As required by the May 2011 agreement, FAA transferred direct oversight for 219 repair stations located in 15 countries to foreign authorities by May 1, 2013 (see figure 2).

Figure 2. FAA-Certificated Repair Stations Transferred to Foreign Authorities' Oversight



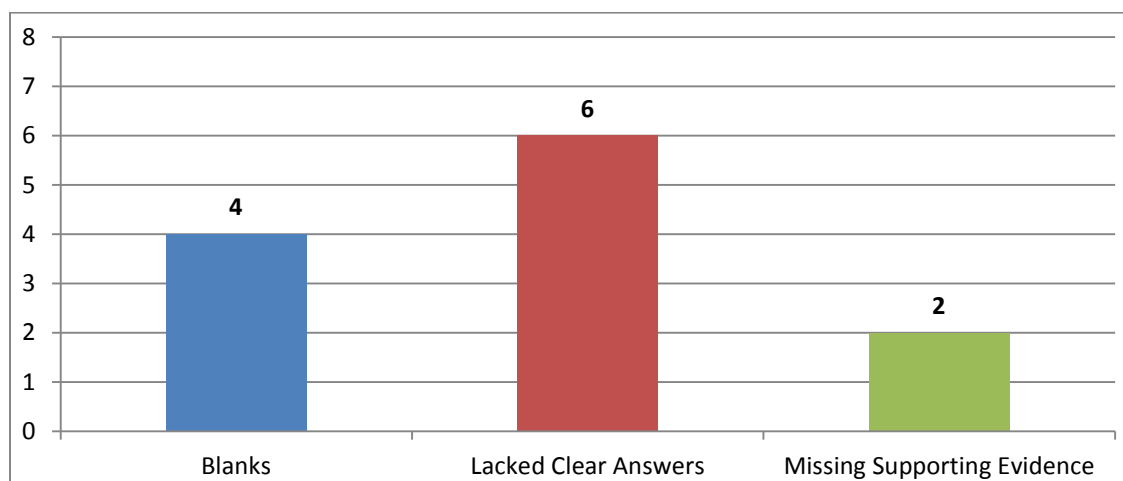
Source: FAA

FAA Transferred Oversight Duties Without Fully Evaluating Foreign Authority Oversight Capabilities

FAA's initial review of foreign authority capabilities did not provide assurance that the authorities were ready to assume oversight responsibilities for FAA-certificated repair stations. Prior to transferring its oversight, FAA required each foreign authority to complete a self-assessment that contained important questions related to inspector training, workforce, and resource issues, such as "Does the [aviation authority] have adequate resources to enforce its regulations?" However, FAA did not ensure that all questions in these assessments were answered or well substantiated to support its conclusion that the foreign authorities possessed comparable capabilities to FAA. As shown in figure 3, four of eight self-assessments we reviewed contained blanks where answers should have been entered, and six of eight self-assessments lacked clear answers (e.g., failure to

define a baseline for a sufficient number of inspectors required to perform surveillance).

Figure 3. Number of Foreign Authority Self-Assessments With Deficiencies by Category



Source: OIG analysis

FAA inspectors were further hindered in their reviews of foreign authority self-assessments because they did not have specific instructions on how to evaluate the data provided. For example, FAA inspectors lacked guidance on how to determine whether the authorities had sufficient resources, such as what staffing levels foreign authorities needed to perform oversight for FAA. Instead, FAA inspectors relied on their own judgment as a basis to determine each foreign authority's abilities. Despite the unresolved discrepancies in the foreign authority self-assessments and lack of appropriate guidance, FAA concluded that all eight authorities met requirements to perform FAA's oversight.

FAA Lacked Assurance That Foreign Authorities Completed Initial Inspector Training Before Transferring Its Oversight Duties

FAA did not ensure that foreign authority inspectors reported the completion of their training on the Agreement before transferring oversight responsibility. According to the Guidance, foreign authorities were responsible for training their inspectors on FAA certification procedures and regulations prior to FAA transferring oversight responsibility. However, the Guidance is not clear on how foreign authorities should have informed FAA that they completed initial inspector training nor did it require FAA to validate the quality of the training received. Further, FAA did not have a formal process or mechanism to ensure that foreign authority inspectors completed their initial training. Our review of foreign authority training records indicated that the selected inspectors had received training; however, discrepancies we identified in their approvals of FAA repair

station maintenance manuals⁶ indicate that the training these inspectors received was not as robust as it should have been. Notifying FAA that foreign authority inspectors were trained is critical to ensuring that these inspectors were prepared to assume oversight responsibilities and start the transfer process.

FAA'S MONITORING OF EU-BASED REPAIR STATIONS IS IMPEDED BY TRAINING, PROCEDURAL, AND DATA QUALITY WEAKNESSES

FAA did not provide effective training to its inspectors on their new oversight responsibilities beyond the initial training on the transfer process or establish guidance on their new roles as country coordinators. Additionally, a lack of robust inspection procedures hinders FAA's ability to accurately assess repair station compliance. At the same time, fewer inspections of foreign repair stations leave FAA inspectors with less data to analyze in its risk-based oversight system.

FAA Training and Guidance Did Not Ensure Inspectors Understood Their New Roles and Responsibilities

FAA and EASA's initial training for foreign authority inspectors did not include instructions on how to inspect repair stations for compliance with FAA regulations. Instead, the training consisted of high-level briefings that focused on Agreement components, background, and regulations. Further, FAA inspectors were not provided adequate guidance on how to evaluate foreign authority compliance with FAA regulations, or on their new responsibilities associated with the Agreement. As a result, FAA cannot be assured that foreign authority inspectors are ready to take on this oversight responsibility or that the repair stations are continuing to comply with regulations.

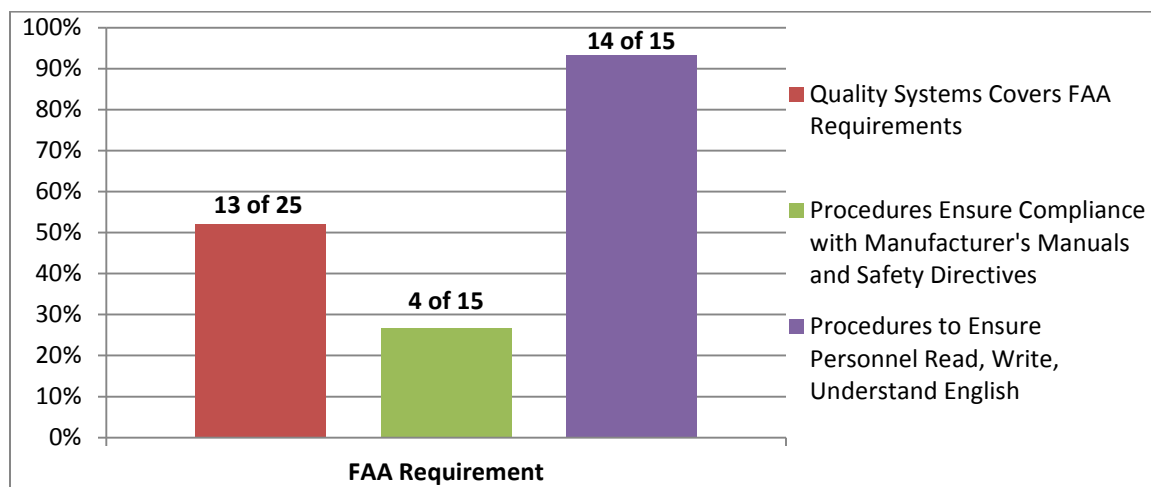
FAA's Training and Guidance Were Not Effective at Ensuring Foreign Authority Inspectors Understood FAA-Specific Regulatory Requirements

Foreign authority inspectors approved non-compliant repair station manuals because the Guidance and training provided to inspectors was ineffective. Although FAA and EASA provided initial training on what was required to be in these manuals, we identified repair station manuals that contained deficiencies such as a lack of procedures to describe how a repair station will comply with manufacturers' maintenance manuals and ensure that all current safety directives

⁶ These maintenance manuals are known as FAA Supplements. See figure 4 for examples of areas of these manuals where we found discrepancies.

are available to maintenance personnel. Figure 4 shows the most common repair station manual deficiencies we identified.⁷

Figure 4. Repair Station Manuals Not in Compliance with FAA Requirements



Source: OIG analysis

These discrepancies occurred, in part, because the foreign authorities were not evaluating whether maintenance manuals contained procedures showing how the repair station would ensure the FAA regulatory requirement was met. According to the Guidance, EU-based repair stations are required to develop procedures that show how they will perform repairs and alterations for U.S.-registered aircraft and/or components. However, rather than specify procedures as to *how* a repair station will ensure required employees can read, write, and understand English, 14 of 15 repair station manuals we reviewed merely included a statement requiring employees *to* read, write and understand English or did not provide a procedure to ensure the FAA requirement would be met. Because FAA does not review or approve these repair station manuals, FAA may not become aware of such discrepancies until the Agency inspectors perform their own on-site inspections, which could be many years after the foreign authority approves the manual.

Contributing to this problem, foreign authority inspectors expressed confusion about FAA-specific terminology and documentation requirements for FAA certificate renewals. Requirements that apply to FAA include terms and concepts not commonly used in EASA certifications and are not adequately explained in the Guidance. For example, inspectors expressed confusion with terminology such as “supplier” and “contractor,” as these terms can be used interchangeably. If the foreign authority inspectors do not understand these FAA-specific terms, it would be difficult to ensure that repair stations comply with FAA regulations.

⁷ The universe of repair station manuals we reviewed varied depending on availability of 2nd level-manuals and technical instructions referenced in the primary manual.

Additionally, foreign authority inspectors were unclear as to what documentation FAA needs to certify compliance with the Dangerous Goods training requirement of FAA repair station renewals. Repair stations that handle dangerous goods⁸ must certify that they have trained their employees in proper hazardous materials handling. Since the Guidance does not require repair stations to affirm whether they handle dangerous goods, foreign authority inspectors could be overlooking key FAA requirements when processing repair station certificate renewals.

Inspectors Did Not Know How To Properly Complete Inspection Checklists

FAA and foreign authority inspectors did not understand how to properly complete the inspection checklists used for conducting FAA sample inspections and certificate renewal inspections. This is because they were not specifically trained on this task or were not given written, step-by-step instructions to help them understand the intent of the questions. While inspectors did receive training, it did not focus on the *intent* of the inspection questions or on how to complete the checklist. Rather, the training focused more on providing inspectors with background information and the legal basis for establishing bilateral agreements. FAA and foreign authority inspectors stated that written step-by-step instructions or formal training on how to complete the forms would have helped ensure consistent understanding among inspectors and reduce the chance for reporting errors.

Further, only 7 of 44 FAA and foreign authority inspectors we interviewed recalled receiving any specific training related to completing inspection checklists, and four of those seven inspectors who received training were assigned to the same foreign authority office. This particular office trained its inspectors internally and included step-by-step instructions on how to interpret and answer each of the checklist questions. This training helped augment and reinforce their understanding of the FAA regulations, as well as their new role in overseeing repair stations on FAA's behalf. Without specific training, other inspectors learned how to complete the checklists by trial and error, or asked other, more experienced inspectors for assistance. For example, 15 of 44 (34 percent) inspectors sought out alternate sources for instruction and guidance on completing the inspection checklists.

Additionally, over half of the inspectors we interviewed (25 of 44) expressed concern over the lack of clarity in the checklist questions. FAA and foreign authority inspectors cited problems understanding the intent of all the questions and difficulty reconciling answer choices with the content of some questions. Foreign authority inspectors also stated that questions related to FAA-specific regulations not used by EASA were confusing and believed that including

⁸ Dangerous goods are substances that pose an unreasonable risk to health, safety, and property such as hazardous materials, substances and wastes and elevated temperature materials.

Guidance-specific references for each inspection checklist questions would have been helpful. Further, we identified many examples of poorly written checklist questions, as shown in the table below.

Table. Types of Poorly Written Inspection Checklist Questions

<i>Question Design Weaknesses</i>	<i>Examples</i>
Question Requires Only a cursory Review / No Validation Required	<i>Does the [repair station] have procedures for reporting to the FAA failures, malfunctions, or defects on [parts] installed on U.S. [aircraft]?</i>
Multi-Part Question Requires More Than One (or differing) Answer	<i>Does the [repair station] follow the [Return to Service] procedures contained in the [manual....]? Including procedures for providing the operator with any additional documentation they require?</i>
Question Doesn't Fit "Y/N/NA" Options	<i>"Do a sample audit of the capabilities list...."</i> (Not a Question – Action Step)

Source: OIG analysis

Because the checklist questions are poorly written, the inspectors could not answer the questions properly. As a result, FAA receives inspection data that are difficult to interpret, which hinders its ability to ensure repair stations comply with the FAA Regulations.

FAA Did Not Provide Guidance to Inspectors on Their New Roles and Responsibilities

FAA inspectors do not have defined responsibilities for their current roles as country coordinators because this role has changed since FAA transferred its oversight duties to foreign authorities. During the transfer of FAA oversight duties, FAA inspectors acted as country coordinators, or liaisons, to assist foreign aviation authorities with processing certificate transfers and corrective action plans for findings. Now that the transfer is complete, the role of the FAA country coordinator has significantly changed, but FAA has not provided updated guidance to inspectors on their new roles. For example, as country coordinators, inspectors now act as points of contact for the foreign authorities by coordinating repair station inspection activities, receiving certificate renewal packages, and maintaining repair station files. Because these duties are not formalized in FAA inspector guidance, FAA inspectors we interviewed have differing ideas of what ongoing country coordinator duties entail. Foreign authority inspectors expressed the importance of having a dedicated FAA inspector acting as a liaison to provide them with consistent, accurate, and timely information to their questions regarding the Agreement. By the end of 2015, Europe-based FAA inspectors will be

relocated back to the U.S. while continuing to serve as liaisons and monitor foreign authority compliance with the Agreement.

Differences in Inspection Procedures and Lack of Guidance Hinder FAA's Oversight

EASA's procedures for documenting and reporting inspection results of EASA-certificated repair stations in the United States are more robust than FAA's procedures for FAA repair station inspections in the EU.⁹ The Agreement harmonized similarities in maintenance regulations between the United States and the EU, but the Guidance lacks similar harmonization for FAA and EASA inspectors. We identified weaknesses in FAA's procedures, which, if left unchecked, will hinder its ability to effectively carry out its oversight responsibilities. For example:

- The Guidance specifies that FAA offices in the United States will provide EASA with corrective action plans within 90 days of its inspection. Yet, foreign authorities have no similar requirement to respond to FAA findings in the EU. For example, it took nearly a year for one foreign authority to provide FAA with corrective actions and close out a finding related to insufficient inspector training. Delayed responses from foreign authorities make it difficult for FAA inspectors to validate the authority's compliance.
- EASA inspectors can review U.S.-based repair stations for compliance with EASA Part 145 requirements¹⁰ during inspections, but FAA inspectors cannot perform this same review for EU-based repair stations. The Guidance states that FAA and EASA inspectors should review only the regulatory differences during repair station inspections. However, EASA designed its inspection checklists to permit its inspectors to document discrepancies related to repair station operations outside the regulatory differences, as shown in figure 5, but FAA did not.

⁹ Like FAA sample inspections of foreign authorities and EU-based repair stations, EASA is responsible for conducting sample inspections of FAA offices and U.S.-based repair stations for compliance with European regulations.

¹⁰ EASA Part 145 requirements are regulatory standards for the certification and operation of an aircraft repair station.

Figure 5. EASA Inspection Checklist

EFFECTIVE DATE: 01/29/2014
CHANGE 4

MAINTENANCE ANNEX GUIDANCE

Findings Debriefed to the Organization; Findings Raised Formally by EASA	
Non-compliance with special conditions/MAG	Reference to MAG /Special Condition
Findings to be raised with the equivalent Part 145 paragraph	Reference to Part 145
Signatures	Date of Signatures:
SIS TEAM (EASA/AA)	Regional Coordinator
Name:	
Sign	

Source: Maintenance Annex Guidance, Change 4

We observed inspection protocol differences when we shadowed an FAA inspector during an inspection of an EU-based repair station. The FAA inspector did not know how to document two discrepancies that violated FAA part 145 regulations but were not part of the Special Conditions inspection because neither the FAA inspection checklist nor the Guidance has provisions for FAA inspectors to report these types of problems. FAA inspectors’ inability to document identified non-compliances with repair station regulations results in discrepancies going unreported and limits the amount of data available for FAA to assess risks and target resources.

Conversely, EASA’s ability to assess and document repair station non-compliances with regulations outside of its Special Conditions is clearly stated in its inspection reports to FAA and U.S.-based repair stations. These reports state that the purpose of the completed inspection was “...to check the achieved standards of FAR 145 and the EASA Special Conditions for the equivalence with EASA Part 145 standards and report any findings...” to EASA. As a result, EASA inspectors are reviewing U.S.-based repair stations for more than just compliance with EASA regulations, resulting in more comprehensive inspections.

- Because FAA uses a risk-based approach to oversight, the Guidance does not require inspectors to review compliance with all 12 FAA Special Conditions during repair station sample inspections. Instead, inspectors are expected to review a representative sample of items. However, we identified incorrect and inconsistent answers in the inspection checklist that FAA’s inspectors used to annotate their repair station reviews. These errors occur, in part, because FAA’s inspection checklist lacks an option for indicating when/if an inspector chooses not to review a particular item. In contrast, EASA’s inspection checklist allows inspectors to use “N/R” (“Not Reviewed”) if they choose not to review an item that is still applicable to the repair station being inspected. Because FAA’s checklist does not offer the “N/R” option, inspectors must either document the entity’s compliance with the item (by answering “Yes” or “No”) or write “N/A” (“Not Applicable”) – even if the item is, in fact, an applicable regulation. This limitation in FAA’s inspection checklist has contributed to confusion and, as a result, potentially more reporting errors on inspection checklists. FAA’s inspection data are consequently less useful in risk analysis, trending, and future inspection planning.

Additionally, the Guidance lacks procedures for both FAA and EASA to carry out their oversight of each other effectively because it does not require the inspecting authority (FAA or EASA) to accept, or approve, corrective action plans from the authority being inspected.¹¹ According to the Guidance, FAA offices must submit to EASA—and foreign authorities must submit to FAA—corrective action plans detailing how FAA offices and foreign authorities will correct deficiencies identified during compliance inspections. However, without a procedure for FAA or EASA to actually “accept” proposed corrective action plans, FAA and EASA have no further course of action to take if the plans do not actually address identified deficiencies. For example, a U.S.-based FAA office provided EASA with its corrective action plan after EASA completed its inspection of the office for compliance with the Agreement, but the plan did not fully address the discrepancies. More than a year after the inspection date, we found no evidence that the FAA office ever corrected these issues. As a result of the lack of procedures, neither regulatory authority can be assured that corrective action plans address identified deficiencies.

Lack of Inspection Data Is Hindering FAA’s Ability To Effectively Monitor Risk at Foreign Repair Stations

Under the Agreement, FAA will receive less repair station inspection data than when its inspectors performed surveillance. This is primarily due to less frequent inspection intervals (i.e., from annually to once every 2 years). Additionally,

¹¹ Under the terms of the Guidance, FAA conducts inspections of foreign authorities and EASA conducts inspection of FAA offices in the United States to verify compliance with the Agreement.

foreign authorities are only required to provide FAA with inspection results pertaining to those FAA regulations that differ from EASA's and safety-related inspection results related to the harmonized U.S./EU regulations, not their entire repair station facility inspection.¹² However, the Agreement does contain a provision that permits FAA and foreign authorities to share inspection data, such as the full repair station inspection reports. FAA inspectors rely on data in FAA's risk-based oversight system to select foreign authority and repair stations to sample compliance with the Agreement. Six of nine FAA inspectors we interviewed expressed concern that they are dependent on the foreign authorities to communicate inspection data necessary for risk assessment. However, FAA inspectors have not pressed EASA or foreign authorities for additional information. This is because the Agency believes the Agreement is built on "trust" and that by requesting this information, it gives the appearance that FAA is not confident in authorities' abilities.

Additionally, FAA is missing opportunities to collect data for risk assessments because it does not receive corrective action plans from repair stations when FAA inspectors perform sample inspections. The Guidance states responsibility for resolving discrepancies with repair stations rests with the foreign authorities for both certificate renewal inspections (where the authority conducts the inspection on FAA behalf) and sample inspections (where FAA conducts its own inspections). However, FAA only receives the results of a repair station's corrective action plan when the foreign authority includes it to FAA as part of the certificate renewal process, but not when FAA identifies discrepancies as part of a sample inspection. FAA inspectors expressed concern that they should receive corrective action plans for both type of inspections in order to evaluate how repair stations corrected discrepancies and use this data to perform risk-analysis. For example, during two sample inspections, FAA inspectors identified a repair station employee who had not completed required FAA training, and a manual that lacked adequate procedures for reporting suspected unapproved parts. In accordance with the Guidance, foreign authority inspectors, not FAA, received the repair stations' corrective action plans to show how these discrepancies were resolved. Both certificate renewal inspections and FAA sample inspections are designed to test and verify compliance with established regulatory requirements, but the inconsistency in the Guidance is preventing FAA from obtaining corrective action plans to evaluate for repair stations for increased risk.

¹² Repair station facility inspection (EASA Part 145 inspection) reports are more comprehensive than FAA regulatory differences reports and may contain safety-related, or "level 1" deficiencies, and/or non safety-related, or "level 2" deficiencies.

CONCLUSION

Bilateral aviation safety agreements are expected to help FAA leverage inspector resources more efficiently for the oversight of more than 400 FAA-certificated repair stations in the European Union. Although this new agreement between the United States and the European Union is still in its early stages of implementation, it represents an important partnership and provides an opportunity to increase efficiency in the oversight of civil aviation maintenance. At the same time, FAA has been building a risk-based oversight framework for years and must continue to fulfill that mission by providing needed guidance to inspectors on their new responsibilities and maximizing all available inspection data in order to effectively analyze and address safety risks at repair stations. Given that the United States is seeking to further expand the use of bilateral agreements to promote aviation safety and reduce duplicative oversight, it is imperative that FAA and EASA work together to refine these processes.

RECOMMENDATIONS

To enhance its oversight of repair stations we recommend that FAA:

1. Clarify inspector guidance on how to assess foreign authorities' readiness to assume FAA oversight responsibilities.
2. Require future candidate countries for bilateral agreements to inform FAA of completion of initial inspector training prior to FAA transferring its oversight authority.
3. Develop standardized instructions for FAA and foreign authority inspectors on how to properly complete inspection checklists.
4. Provide training to foreign authority inspectors on areas such as clarifying how to approve an FAA supplement and how to review and accept written confirmation of dangerous goods training programs.
5. Revise inspection checklist questions by defining FAA-specific terms and requirements and including references to applicable Special Conditions.
6. Develop a control to require all FAA-certificated EU-based repair stations to affirm to foreign authorities whether or not they engage in dangerous goods handling.
7. Develop guidance and provide training to FAA inspectors that clarify their current roles and responsibilities as country coordinators.

8. Conduct a comparative analysis of the Maintenance Annex Guidance to ensure that FAA inspection procedures and checklists are comparable to EASA's, where possible.
9. Revise FAA inspection checklists to ensure that FAA inspectors can clearly document discrepancies related to Part 145 requirements during sampling inspections of EU-based repair stations.
10. Revise the Maintenance Annex Guidance to require FAA inspectors to review and accept corrective action plans resulting from aviation authority sampling inspections.
11. Require FAA inspectors to obtain all level 1 and level 2 findings from EASA Part 145 inspections to enhance FAA's ability to conduct more accurate risk assessments of EU repair stations.
12. Revise the Maintenance Annex Guidance to require FAA inspectors to receive EU-based repair station corrective action plans after completing sampling inspections to be used for risk assessment.

AGENCY COMMENTS AND OFFICE OF INSPECTOR GENERAL RESPONSE

We provided FAA with our draft report on May 27, 2015, and received its response on June 25, 2015, which is included as an appendix to this report. In its response, FAA stated that it generally concurs with our recommendations. However, FAA did not provide specific information on its planned actions or completion dates as requested in our draft report. The Agency stated it will provide a detailed response to each recommendation at a later date. Therefore, we consider all recommendations open and unresolved until we receive FAA's detailed response.

ACTIONS REQUIRED

We consider all 12 recommendations open and unresolved. In accordance with DOT Order 8000.1C, we request that FAA provide, within 30 days of this report, the additional information requested above regarding its specific actions taken or planned for each recommendation.

#

cc: DOT Audit Liaison, M-1
FAA Audit Liaison, AAE-100

EXHIBIT A. SCOPE AND METHODOLOGY

We conducted this review between January 2013 and May 2015 in accordance with generally accepted Government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

We conducted our audit work at FAA Headquarters, Eastern Region, and Frankfurt IFO, which has oversight responsibility for FAA-certificated repair stations in the EU. To assess the Agency's monitoring of EU repair stations, we interviewed all 9 of 13 available IFO inspectors to gain an understanding of their roles and responsibilities in carrying out the Agreement. However, not all questions were asked of all inspectors; therefore, the number of inspectors who were asked and responded to certain questions may vary. Additionally, we interviewed inspectors at the San Antonio FSDO to determine their roles and responsibilities for inspecting U.S.-based repair stations on EASA's behalf under the Agreement.

To evaluate the effectiveness of FAA's transfer of EU repair station oversight, we interviewed all 35 inspectors at eight foreign authorities in our review to gain an understanding of their roles and responsibilities in carrying out the Agreement. However, not all questions were asked of all inspectors; therefore, the number of inspectors who were asked and responded to certain questions may vary.

To determine how FAA completed its transfer/transition responsibilities, we used a 2-stage statistical sampling methodology to select 70 (24 percent) out of 293 European repair stations for review. For Stage 1, we randomly selected 8 out of 16 European countries where at least one repair station had transferred/transitioned from FAA to foreign authority oversight. These eight countries had 260 of the 293 repair stations in Europe. For Stage 2, we stratified the 260 repair stations by country and randomly selected repair stations proportionately from each country for a total of 70 repair stations. However, due to time and resource constraints, we were unable to visit each foreign authority regional office in our sample. Therefore, we selected eight foreign authority offices that were responsible for the greatest number of repair stations in our 38 of 70 repair station sample. We completed file reviews at FAA and foreign authority offices to determine file content. We also reviewed all 26 repair station manuals that had been approved by the 8 foreign authority offices in our sample to determine whether they complied with FAA requirements. The universe of manuals in each of our analyses in figure 4 (p. 9) differed based upon the availability of information provided by the foreign authority.

Finally, we interviewed EASA Headquarters officials in Cologne, Germany, to determine their roles and responsibilities under the Agreement. We also traveled with IFO inspectors to Malta and Belgium to evaluate their repair station sampling inspection process.

EXHIBIT B. ENTITIES VISITED OR CONTACTED

FEDERAL AVIATION ADMINISTRATION

Headquarters:

Aviation Safety (AVS)	Washington, DC
Flight Standards Service (AFS)	Washington, DC
Eastern Region	Jamaica, NY

International Field Office (IFO):

Frankfurt IFO	Frankfurt, Germany
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Flight Standards District Offices (FSDO):

San Antonio FSDO	San Antonio, TX
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EUROPEAN UNION

European Aviation Safety Agency	Cologne, Germany
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National Aviation Authorities:

Belgian Civil Aviation Authority	Brussels, Belgium
Organisme pour la Securite de l'Aviation Civile	Roissy, France
Luftfahrt-Bundesamt	Munich, Germany
Ente Nazionale per l'Aviazione Civile	Naples, Italy
Ente Nazionale per l'Aviazione Civile	Rome, Italy
Transport Malta-Civil Aviation Directorate	Luqa, Malta
Civil Aviation Authority-The Netherlands	Hoofddorp, Netherlands
Instituto Nacional de Aviação Civil, I.P.	Lisbon, Portugal
Agencia Estatal de Seguridad Aérea	Madrid, Spain
United Kingdom Civil Aviation Authority	Gatwick, United Kingdom

14 CFR Part 145 Repair Stations:

Snecma Services Brussels

Zaventem, Belgium

Aeromaritime Mediterranean Ltd.

Hal Far, Malta

EXHIBIT C. FAA SPECIAL CONDITIONS

1. A signed and dated statement by the accountable manager that obligates the organization to comply with the Annex.
2. A statement in the supplement that the quality system shall also cover the FAA special conditions.
3. Procedures for approval for release or return to service that satisfy the requirements of 14 CFR part 43 for aircraft and use of EASA Form 1 for components. This includes the information required by 14 CFR sections 43.9 and 43.11 and all information required to be made or kept by the owner or operator in English as appropriate.
4. Procedures for reporting to the FAA failures, malfunctions, or defects, and Suspected Unapproved Parts discovered, or intended to be installed, on U.S. aeronautical products.
5. Procedures to notify the FAA regarding any changes to line stations that maintain U.S.-registered aircraft.
6. Procedures to qualify and monitor additional fixed locations within the EU Member States list in Appendix 2 to this Annex.
7. Procedures in place to verify that all contracted/sub-contracted activities include provisions for a non-FAA-certificated source to return the Article to the AMO for final inspection/testing and return to service.
8. Procedures to ensure that major repairs and major alterations/modifications (as defined in 14 CFR) are accomplished in accordance with data approved by the FAA.
9. Procedures to ensure compliance with air carrier's Continuous Airworthiness Maintenance Program, including the separation of maintenance from inspection on those items identified by the air carrier/customer as Required Inspection Items.
10. Procedures to ensure compliance with the manufacturer's maintenance manuals or instructions for continued airworthiness and handling of deviations. Procedures to ensure that all current and applicable airworthiness directives published by the FAA are available to maintenance personnel at the time the work is being performed.

11. Procedures to confirm that the AMO supervisors and employees responsible for final inspection and return to service of U.S. aeronautical products are able to read, write, and understand English.
12. Procedures to permit work away from fixed location on a recurring basis, when applicable.

EXHIBIT D. MAJOR CONTRIBUTORS TO THIS REPORT

<u>Name</u>	<u>Title</u>
Tina Nysted	Program Director
Kevin George	Project Manager
Taniesha Willis	Senior Analyst
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Aiesha Gillespie	Senior Analyst
Nathaniel Caldwell	Senior Auditor
Andrea Nossaman	Writer/Editor
Petra Swartzlander	Statistician

APPENDIX. AGENCY COMMENTS



Federal Aviation Administration

Memorandum

Date: June 25, 2015

To: Matthew E. Hampton, Assistant Inspector General for Aviation Audits

From: H. Clayton Foushee, Director, Office of Audit and Evaluation, AAE-1 *H. Clayton Foushee*

Subject: Federal Aviation Administration's (FAA) Response to Office of Inspector General (OIG) Draft Report: Repair Stations in the European Union (EU)

The FAA works closely with the European Aviation Safety Agency (EASA) and continues to make improvements in the development of new aviation safety agreements between the United States (U.S.), the EU, and the National Aviation Authority safety inspectors who oversee repair stations in the EU on the FAA's behalf. Presently, the FAA and EASA are jointly making significant changes to the Maintenance Annex Guidance to ensure the continuation of the high level of regulatory cooperation and harmonization between the U.S. and the EU. The inspector training material is being refined to better educate FAA and foreign authority inspectors of the requirements when performing repair station oversight.

Additionally, the FAA is revising its inspector guidance to provide more comprehensive and standardized procedures for repair station oversight. The FAA is also improving the capabilities and performance of its risk management tools available for FAA inspectors to assess elevated risk. Other highlights incorporated in the revisions, based on the OIG recommendations include: communication, coordination and reporting instructions; training requirements and availability; roles and responsibilities; risk-based sampling inspection system processes; Approved Maintenance Organizations provisions and procedures; and document and form submission processes and timelines. These enhancements will result in more consistent inspection practices that will improve the detection of systemic deficiencies and increase the effectiveness of repair station safety oversight performed by the FAA, EASA, and the National Aviation Authorities.

Upon preliminary review of the report, the FAA concurs with OIG's 12 recommendations, as written. Due to the bilateral coordination required for some of the

recommendations, the FAA plans to implement recommendations 1, 2, 4, 6 and 8 by March 31, 2016 and fully implement the remaining recommendations by June 30, 2017. We will provide a detailed response to each of the OIG recommendations after the publication of the final report.

We appreciate this opportunity to offer additional perspective on the OIG draft report. Please contact H. Clayton Foushee at (202) 267-9000 if you have any questions or require additional information about these comments.