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BEFORE THE SENATE COMMITTEE ON COMMERCE, SCIENCE AND TRANSPORTATION – SUBCOMMITTEE ON AVIATION OPERATIONS, SAFETY, AND SECURITY

ON
THE OVERSIGHT OF FOREIGN AVIATION REPAIR STATIONS

JUNE 20, 2007

Chairman Rockefeller, Senator Lott and members of the subcommittee, thank you for inviting PASS to testify today on the oversight of foreign aviation repair stations. Professional Airways Systems Specialists (PASS) represents 11,000 Federal Aviation Administration (FAA) employees, including approximately 2,800 Flight Standards field aviation safety inspectors[1] located in 103 field offices in the United States and eight international field offices in the United States and abroad. FAA inspectors are responsible for certification, education, oversight, surveillance and enforcement of the entire aviation system, including air operator certificates, repair station certificates, aircraft, pilots, mechanics, flight instructors and designees.

In recent years, the overall dynamic of the aviation industry has experienced significant changes. One such change in practice is the outsourcing of maintenance work to repair stations in this country and abroad. Whereas much of this work was once done at the air carrier's facility, according to the Department of Transportation Inspector General, air carriers' use of outsourced repair stations has grown from 37 percent of air carriers' maintenance costs in 1996 to 62 percent in 2005, or nearly $3.4 billion of the $5.5 billion spent on maintenance. During the first three quarters of 2006, the amount of outsourced maintenance had already increased to 64 percent.[2]

A large portion of this work is being performed at facilities in foreign locations; there are currently over 690 foreign repair stations certified by the FAA. FAA inspectors at international field offices (IFOs) are charged with certifying these repair stations and then recertifying them approximately every two years. FAA inspectors at certificate management offices (CMOs) in this country provide oversight of the maintenance work performed on their assigned air carriers at FAA-certificated foreign repair stations. However, with the current state of the inspector workforce and the tedious and bureaucratic process behind inspecting foreign repair stations, many inspectors say that they are not confident with the level of oversight of foreign repair stations and that serious safety issues are not being addressed.

Airworthiness Inspectors

The airworthiness inspector workforce consists of both avionics and maintenance inspectors, and there are two types of airworthiness inspectors—general aviation and air carrier:

- **General aviation inspectors** oversee both foreign and domestic repair stations. Inspectors at IFOs are responsible for certifying FAA-certificated foreign repair stations. There are eight FAA IFOs located worldwide in Alaska, California, Florida, New York, Texas, England, Germany and Singapore that conduct certifications and surveillance of U.S. foreign repair stations in a particular geographic area. When inspecting a foreign repair station, the IFO inspectors examine several important elements, including, among other things, ensuring that the repair station has and continues to comply with the Code of Federal Regulations Part 145 for their repair station certificate and operation specifications, making sure repair station manuals continue to meet federal aviation regulations, and examining the maintenance

[1] As of February 2007, the FAA lists the number of Flight Standards inspectors as 3,593. This figure, however, includes first line field and office managers; the PASS figure only includes inspectors who actually perform inspection functions in the field.

[2] Department of Transportation Inspector General, *Aviation Safety: FAA's Oversight of Outsourced Maintenance Facilities*, CC-2007-035 (Washington, D.C.: March 29, 2007), p. 1.

training, tools and equipment. These inspections vary depending on the size and complexity of the repair station, with the time to complete an inspection on a foreign repair station ranging from a day to a week or more, not including travel time.

- **Air carrier inspectors** are assigned to a specific air carrier and examine the certificate-specific work on behalf of the air carrier certificate to which they are assigned. An air carrier inspector examines the actual work being done at the air carrier's facilities or a repair station related to their respective air carrier certificate and not the repair station in general. This can include inspecting the aircraft, examining technical data, and looking at housing and facilities. Air carrier inspectors often "spot check" specific areas based upon risk-assessment data, a process that can take a few hours or several days depending on the area of concern.

Following an inspection, both the general aviation and air carrier airworthiness inspectors enter the results of their inspections into specific FAA databases. General aviation inspectors use the Program Tracking Reporting System (PTRS) database, and air carrier inspectors enter information into either the PTRS database or the Air Transportation Oversight System (ATOS) database. This information is then available for all FAA inspectors through the Safety Performance Analysis System (SPAS), enabling inspectors to analyze areas of potential concern.

Inadequate Inspector Staffing

A recent study released by the National Academy of Sciences called attention not only to insufficient inspector staffing but also to the FAA's lack of a viable staffing model to determine whether it has the correct number of skilled individuals in position to accomplish the responsibilities of the job. As noted by the Academy, "The number of aviation safety inspectors employed by the FAA has remained nearly unchanged over the past several years, while aviation industries, especially the commercial air carriers, have been expanding and changing rapidly." [3]

The increasing use of foreign repair stations has been drawing even more attention to the inspector staffing problem. As the industry continues to expand, the number of FAA inspectors has not kept pace; in fact, nearly half of the workforce will be eligible to retire by 2010. Unfortunately, for 2008, the FAA is only requesting funding to hire an additional 87 inspectors[4] above attrition despite the looming surge in retirements and the fact that it takes two to three years to fully train an inspector.

With airlines increasing their reliance on outsourced maintenance work, the workload of inspectors located at CMOs charged with overseeing this work has skyrocketed but inspector staffing has remained stagnant. A prime example of the problems with inspector understaffing and the increasing reliance on outsourced maintenance work is Delta Airlines. Since 2005, Delta has outsourced all of its heavy maintenance work. Inspecting the heavy maintenance work

[3] National Research Council, Committee on Federal Aviation Administration Aviation Safety Inspector Staffing Standards, *Staffing Standard for Aviation Safety Inspectors* (Washington, D.C.: The National Academies Press, 2006), p. 1-4.
[4] Government Accountability Office, *Federal Aviation Administration: Key Issues in Ensuring the Efficient Development and Safe Operation of the Next Generation Air Transportation System*, GAO-07-636T (Washington, D.C.: March 22, 2007), p. 31.

involves a thorough examination of an entire airplane. According to one inspector at the Delta CMO, when this work was performed at the Delta facility, an inspector could oversee the work by traveling a mere seven miles to the Delta facility. Now, inspectors are forced to travel from the CMO in Atlanta to places located hours away, such as Florida, Mexico or, as recently announced by Delta, China. To make matters worse, staffing figures are down considerably at the CMO—after losing four inspectors last year and another two this year with no replacements hired, the CMO is now staffed at 11 airworthiness inspectors with a few additional inspectors at different locations.

Inspectors stationed at IFOs responsible for certifying repair stations also face several problems related to insufficient staffing. The number of foreign repair stations is on the rise as more and more air carriers outsource work to these less-expensive alternatives. A lack of inspector staffing, however, makes it difficult to perform these certifications and impossible to do any follow-up if a problem is detected. For instance, there are only eight airworthiness inspectors at the London IFO responsible for 165 certificates in England and Scotland. When one of these inspectors dedicated to avionics went on medical leave, this left only one avionics inspector to cover all 165 of these repair stations. In another example, for years, a single inspector at the Miami IFO had been responsible for certifying the 14 certificated repair stations in Brazil, many of which are expansive, complicated facilities. The need for additional staffing was finally addressed in this particular situation and another inspector has been assigned to the repair stations in Brazil.

If the industry is going to continue to increase its use of foreign repair stations, it is essential to aviation safety that there are enough inspectors to ensure oversight of the repair stations and the work performed there. Many of our inspectors have told PASS that their workload is based on the number of inspectors available rather than the oversight that is needed. As such, PASS is requesting that Congress direct the agency to develop a staffing model for aviation safety inspectors and follow the recommendations outlined in the Academy's study. The Academy's staffing study also emphasized the importance of involving those who are affected by the staffing model in its development, specifically stating that aviation safety inspectors, as well as PASS, should be included in the process from the beginning and remain active participants through the model's design, development and implementation. In addition, the FAA should be required to report to Congress on a quarterly basis on its inspector workforce plan in order to ensure that the agency has an adequate number of inspectors to oversee the industry.

Funding Constraints

Combined with the low staffing numbers, insufficient funding for travel obviously has a considerable impact on the FAA's ability to perform oversight of foreign repair stations. PASS is hearing from our inspectors of more and more instances in which FAA inspections of major repair stations that perform heavy maintenance work have been cancelled or cut short due to lack of funds. According to inspectors in the field, the inspection process has become primarily budget driven rather than motivated by safety.

CMO inspectors located in this country encounter numerous problems when trying to travel to foreign repair stations and are often questioned by FAA management as to the necessity of travel

expenses needed to reach a location where maintenance is being performed. For example, a recent trip to a repair station in Germany was approved and then cancelled at the last minute when the inspector was told that there was not enough funding to perform the inspection. In another situation, a CMO inspector responsible for examining air carrier outsourced maintenance work performed at repair stations in Singapore, China and Ireland is only able to get to these repair stations *every four or five years*. Even more disturbing, another CMO inspector responsible for work being performed in Scotland has *never* even been to the repair station. Although infrequently seen by the CMO inspector, it should be noted that these repair stations are still recertified by an IFO inspector approximately every two years.

The ability to follow up once a problem is detected is an issue faced by both CMO and IFO inspectors, and both of these groups of inspectors say funding is the primary reason for not being able to follow up on an issue. One IFO inspector reports that they often have to wait until the following year to validate whether or not a problem has been corrected or pass on the issue to the next inspector traveling to that country. CMO inspectors are often only able to send the repair station a letter, depend on the repair station's response for closure, and wait until the next inspection in order to determine if the issues have been addressed and a long-term solution incorporated.

It is impossible to ensure safe operations at these repair stations if inspectors are rushed in their inspections, unable to perform adequate follow-up or prevented from visiting the repair stations altogether. The IG specifically addressed the impact of the lack of resources on the oversight process, concluding that "adequate resources need to be committed to air carrier oversight to ensure the continuity of safe operations, particularly as the airline industry makes significant and ongoing transitions in their operations."[5] As such, PASS feels that it is imperative that the FAA allocate adequate resources for FAA inspectors to visit each foreign repair station at a minimum of twice a year.

Additional Concerns With Oversight of Foreign Repair Stations

Inspectors in the field relay several problems associated with traveling to foreign countries to examine repair stations. The process for traveling overseas to inspect a repair station is so labor intensive, often involving State Department coordination and country clearances, that an inspector, on average, must give 60 to 90 days notice prior to their arrival at the repair station. In addition, inspectors must often travel in pairs when visiting specific countries that may be considered unsafe. When the inspector is finally able to get to the foreign repair station, the repair station is fully aware of the visit and the element of surprise is nonexistent, rendering the inspection a simple formality.

Once the inspector has traveled to the repair station, inspecting the repair station or the work performed there introduces additional difficulties, including cultural and language issues, trouble accessing equipment, and inability to examine all processes and services used. In many cases, employees working at foreign repair stations cannot read or speak English; yet, the air carrier and repair station maintenance instructions are usually written in English. Inspectors traveling to

[5] Department of Transportation Inspector General, *Safety Oversight of an Air Carrier Industry in Transition*, AV-2005-062 (Washington, D.C.: June 3, 2005), p. 3.

foreign locations reveal that training is also a major problem overseas and that they often see maintenance employees working on aircraft without the proper training. For instance, inspectors report that personnel at foreign repair stations do not understand that an item with an expired shelf life cannot be used even if it still appears in good condition.

There is also serious concern over the regulations governing foreign repair stations. For example, as opposed to domestic airline or repair station employees, workers at foreign repair stations are not required to pass drug and alcohol tests. In addition, criminal background checks are not required at foreign repair stations. There also continues to be major concerns regarding security at these facilities, with many of the repair stations lacking any security standards. It should go without saying that if a foreign repair station wants to work on U.S.-registered aircraft or any aircraft that operate in this country, those repair stations should be required to meet the same safety standards as domestic repair stations.

Increasing Use of Bilateral Aviation Safety Agreements (BASAs)

Instead of addressing the inspector staffing and funding issues, the FAA continues to expand the use of bilateral agreements with foreign countries to oversee repair stations working on U.S. carriers. The Bilateral Aviation Safety Agreement (BASA) with Maintenance Implementation Procedures allows foreign authorities to provide oversight of the work performed at repair facilities with limited involvement from FAA inspectors. This eliminates the need for the inspector to travel to the repair station at all and entrusts responsibility entirely to a foreign entity. However, there are inherent problems associated with allowing non-FAA employees in foreign locations to perform work on behalf of the FAA, primarily the fact that the FAA does not have adequate oversight procedures in place to ensure the quality of these inspections. PASS's concerns regarding the FAA's use of bilateral agreements include the following:

- According to the Department of Transportation Inspector General (IG), foreign inspectors do not provide the FAA with sufficient information on what was inspected, the problems discovered and how these problems were addressed. The IG goes so far as to state that at least one foreign authority representative said that "they did not feel it was necessary to review FAA-specific requirements when conducting repair inspections."[6]

- The information provided to the FAA by foreign inspectors is often incomplete, inaccurate or difficult to understand due to language constraints. In fact, the inspection documents given to the FAA were found to be incomplete or incomprehensible in 14 out of 16 files reviewed by the IG (88 percent).[7] Although the reports are supposed to be filed in English, this is often not the case. Furthermore, the FAA does not even require that these foreign aviation authorities provide the appropriate amount of information in order to allow FAA inspectors to verify that the work is being done.

- As part of the bilateral agreements, FAA inspectors can perform annual "sample" inspections of up to 10 percent of facilities already reviewed by foreign inspectors. This system of "spot

[6] Department of Transportation Inspector General, *Review of Air Carriers' Use of Aircraft Repair Stations*, AV-2003-047 (Washington, D.C.: July 8, 2003), p. v.
[7] Id.

checking" only highlights the serious deficiencies with the bilateral agreement process. In one case cited by the IG, when the FAA performed a sample inspection of a repair station that had already been inspected by a foreign inspector, the FAA inspectors found 45 problems, several of which were directly related to FAA requirements.[8] Foreign aviation authorities rely on European requirements rather than adhering to U.S. safety standards. Currently, other than these ineffective sample inspections, the FAA primarily conducts surveillance of foreign aviation authorities through desk reviews of inspection documents, the quality of which has already been highlighted as a major issue. In other words, the FAA has no true way to ensure that the inspections at these foreign repair stations are being conducted according to U.S. regulations. In addition, inspectors report that the foreign aviation authorities are not always reporting to the FAA deficiencies found during their inspections, which leaves FAA inspectors with the impression that there are no problems.

- In order to visit a country holding a BASA, the inspector must provide data to prove that a trip is necessary. However, the foreign civil aviation authorities are often not providing accurate data to the agency, making it impossible for the inspector to show that a trip is warranted. In one case, there was no information in the database on problems with a repair station in Frankfurt, but when an inspector was finally able to get to the facility, he noticed several serious violations that had not been put into the system. If these countries are not providing the United States with data, it is impossible to ensure the safety of the facility or the work being performed there.

In 2003, the IG issued recommendations to enhance FAA oversight of foreign repair stations. Regarding the many problems with bilateral agreements, the IG recommended that the FAA modify inspection documentation requirements with foreign aviation authorities and develop procedures to ensure that foreign inspectors place appropriate emphasis on FAA requirements when conducting reviews on the FAA's behalf. The IG also advised that the FAA revise procedures for conducting sample inspections of repair stations to allow the FAA to conduct the necessary number of inspections to ensure the work is being completed properly. In recent testimony before the House Aviation Subcommittee, the IG stated that while the FAA has worked to improve the surveillance foreign authorities are performing on the FAA's behalf since the 2003 report, the IG remains nonetheless concerned that "FAA is still not regularly visiting the facilities in the countries where agreements exist with other aviation authorities."[9] The IG cited an example in which FAA inspectors for one air carrier had not visited a major foreign engine repair facility even though the repair station had performed maintenance on 39 (74 percent) of the 53 engines repaired for the air carrier. Furthermore, FAA IFO inspectors had not conducted any spot inspections of this facility in five years.[10]

Without a doubt, the FAA must take steps to ensure that inspections conducted by foreign authorities are done in line with the safety standards and regulations of this country. Until this issue is adequately addressed, along with the IG recommendations, additional agreements with foreign aviation authorities should not be allowed.

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[8] Id.
[9] Department of Transportation Inspector General, *Aviation Safety: FAA's Oversight of Outsourced Maintenance Facilities*, CC-2007-035 (Washington, D.C.: March 29, 2007), p. 9.
[10] Id.

Use of Non-Certificated Repair Facilities

"Non-certificated" means that the repair facility does not possess a certificate issued by the FAA to operate under the Code of Federal Regulations Part 145 and is therefore not subject to direct FAA oversight. A certificated repair station meets the standards as outlined in the Federal Aviation Regulation and is therefore subject to direct FAA oversight to ensure that it continues to meet those same standards. The differences in regulatory requirements and standards at the two facilities are extremely troubling. For example, in an FAA-certificated repair station, it is required that there be designated supervisors and inspectors and a training program. These items are not required at non-certificated repair facilities.[11]

Effective oversight of non-certificated repair facilities gained attention in the aftermath of the January 2003 Air Midwest crash in Charlotte, N.C. The National Transportation Safety Board determined that incorrect rigging of the elevator system by a contractor contributed to the accident and pointed to "lack of oversight" by Air Midwest and the FAA.[12] The airline contracted out the work to an FAA-certificated repair station, which then subcontracted to a non-certificated repair facility. Under federal regulations, the airline is ultimately responsible for ensuring that the work performed at a non-certificated repair facility is done in accordance with standards and requirements.

A December 2005 IG report called attention to airlines' increasing use of non-certificated repair facilities to perform maintenance work, directing the FAA to improve its oversight of air carriers' use of these facilities. According to the IG, the FAA does not know how many non-certificated maintenance facilities air carriers currently use, but the IG identified "as many as 1,400 domestic and foreign facilities that could perform the same work (e.g., repairing flight control systems and engine parts) a certificated facility performs but are not inspected like certificated facilities. Of those 1,400 facilities, we identified 104 *foreign* non-certificated facilities—FAA had never inspected any of them."[13]

The IG discovered that there are no limitations to the amount of maintenance work non-certificated facilities can provide, and that these facilities are performing far more work than minor services, including much of the same type of work FAA-certificated repair stations perform, such as repairing parts used to measure airspeed, removing and replacing jet engines, and replacing flight control motors. Some of these non-certificated facilities are even performing critical preventative maintenance. The IG identified 21 domestic and foreign non-certificated facilities that performed maintenance critical to the airworthiness of the aircraft. Even more alarming is that the FAA was unaware of the critical work being performed at these facilities.[14]

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[11] Department of Transportation Inspector General, *Air Carriers' Use of Non-Certificated Repair Facilities*, AV-2006-031 (Washington, D.C.: December 15, 2005), p. 4.
[12] National Transportation Safety Board, *Loss of Pitch Control During Takeoff, Air Midwest Flight 5481, Raytheon (Beechcraft) 1900D, N233YV, Charlotte, North Carolina, January 8, 2003*, Aircraft Accident Report NTSB/AAR-04/01 (Washington, D.C.: 2004), p. x.
[13] Department of Transportation Inspector General, *Air Carriers' Use of Non-Certificated Repair Facilities*, AV-2006-031 (Washington, D.C.: December 15, 2005), p. 6.
[14] Id., pp. 1 – 2.

Despite the fact that these facilities are performing safety-critical work, FAA oversight is practically nonexistent. In other words, these facilities are performing work pivotal to aviation safety with no guarantee that it is being done in line with FAA and air carrier standards. One inspector revealed that he learned of a repair station contracting out work to an automobile facility. Without having the ability to visit the facility, there was no way for this inspector to ensure that the work was being done according to regulations.

Furthermore, inspectors are discovering numerous incidents involving outsourcing of maintenance for critical functions or "specialized services," an independent rating the FAA grants to some certificated repair stations for specialized and safety-critical functions, such as non-destructive testing, specialized testing of some components, plating, machining and welding. Specialized services, like other maintenance, can and is being contracted out to non-certificated repair facilities. Although recent regulatory changes state that certificated repair stations cannot contract out a specialized service unless they were issued that rating and are required to approve that work for return to service, inspectors have consistently found that it is almost impossible to determine whether that work was done correctly, completely and in accordance with technical data and regulations. Inspectors do not have the time or budget capability to adequately perform surveillance on certificated repair stations, let alone evaluate and monitor subcontracting to non-certificated facilities.

It is obvious that there must be modifications made regarding air carriers' use of non-certificated repair facilities. PASS believes that the most effective way to correct the disparity between certificated and non-certificated repair facilities is for Congress to require that air carriers outsource maintenance work only to certificated repair stations, a standard that should apply to both domestic and international facilities. This is a feasible option that will ensure consistency and improved safety within the aviation industry.

Conclusion

It is clear that oversight of foreign repair stations needs serious attention and improvement. With the FAA anticipating an estimated 1 billion passengers per year by 2015, more inspectors are obviously needed in order to keep up with the rapid growth in the aviation industry. Since the FAA claims that it will be impossible for the inspector workforce to increase at the same rate the aviation industry is changing and expanding, it is moving toward a system-safety approach in which data, which has often been found to be incomplete or limited, will be the primary tool to determine risk. PASS believes that it is dangerous to rely heavily on a risk-based approach when it is obvious that our talented and skilled inspector workforce has kept the U.S. aviation system the safest in the world. In order to ensure continued safety within the aviation industry, there must be an adequate number of experienced and trained FAA inspectors in place with budgetary and management support to accomplish the agency's mission of safety oversight.

PASS and the inspector workforce we represent remain solely focused on ensuring the safety of this country's aviation system. We hope that Congress will seriously examine the conditions surrounding the oversight of foreign repair stations and recognize that major changes need to be made in order to protect this country's reputation as having the safest aviation system in the world.