

AIR CARRIERS' USE OF NON-CERTIFICATED REPAIR FACILITIES

Federal Aviation Administration

Report Number: AV-2006-031

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Memorandum

**U.S. Department of
Transportation**

Office of the Secretary
of Transportation
Office of Inspector General

Subject: **ACTION:** Review of Air Carriers'
Use of Non-Certificated Repair Facilities
Federal Aviation Administration
Report No. AV-2006-031

Date: December 15, 2005

From: Kenneth M. Mead 
Inspector General

Reply to
Attn. of: JA-10

To: Federal Aviation Administrator

At the request of Representative James Oberstar, Ranking Member of the House Committee on Transportation and Infrastructure, we conducted an audit of the Federal Aviation Administration's (FAA) safety oversight of non-certificated repair facilities. The objectives of our audit were to determine: (1) the reasons and extent to which air carriers use non-certificated repair facilities to complete their aircraft maintenance work, (2) how FAA requirements for non-certificated facilities differ from those for certificated repair stations, and (3) how FAA identifies and monitors work performed at non-certificated repair facilities and ensures that air carriers are providing effective oversight of this work. Exhibit A contains a detailed description of the scope and methodology we used to conduct the audit.

The contract maintenance that most people are familiar with and that we have previously reported on involves aircraft repair facilities that are certificated by FAA. FAA has evaluated these facilities to verify that they have the staff and equipment needed to complete the type of maintenance work the facility is approved to perform. However, there is another segment of the repair industry that is widely used by air carriers but is neither certificated nor routinely reviewed by FAA: non-certificated repair facilities.

Air carriers have used non-certificated facilities for years, but it was widely accepted that these facilities were principally used to perform minor maintenance tasks, and only performed more significant work in emergency situations. However, our review determined that this is not the case today—we identified 6 domestic and foreign facilities that performed scheduled maintenance, and 21 that performed maintenance critical to the airworthiness of the aircraft. FAA

permits use of these facilities as long as the work is approved by an FAA-certificated mechanic.

The importance of effective oversight of non-certificated repair facilities became evident in the aftermath of the January 2003 Air Midwest crash in Charlotte, North Carolina. Independent contract mechanics, certificated by FAA and working for a non-certificated company, completed maintenance on the aircraft the day before the accident. The mechanics incorrectly adjusted a flight control system that ultimately was determined to be a contributing cause of the crash—this work was also approved by an FAA-certificated mechanic employed by the non-certificated company. The National Transportation Safety Board determined that contributing causes of the accident included Air Midwest's lack of oversight of the work performed by mechanics working for the non-certificated entity¹ and lack of FAA oversight of Air Midwest's maintenance program.

RESULTS IN BRIEF

Major air carriers spend up to \$4.9 billion annually for aircraft maintenance. Currently, over 50 percent of this maintenance is performed by external repair facilities. Based on our review, a substantial majority of these facilities are certificated by FAA. But non-certificated repair facilities are now performing more significant work than anyone realized.

Our past reviews have focused on the growing trend toward air carriers' use of certificated repair stations and FAA oversight of those entities. Air carrier and FAA officials have previously pointed out that contracting out aircraft maintenance does not compromise the quality of the work performed. Neither our prior work nor this report is focused on contract maintenance versus in-house maintenance—rather, our work focuses on the fact that aircraft maintenance, no matter where it is performed, requires effective oversight.

The United States continues to maintain the safest aviation system in the world, and ensuring that the overlapping controls of safety oversight are working in all parts of the aviation system will help keep it that way. These controls were not working when the 2003 Air Midwest crash occurred in Charlotte, NC. This crash brought to light a relatively unknown group of outsourced maintenance providers that FAA needs to consider: non-certificated repair facilities.

Prior to our review, FAA officials advised us that non-certificated repair facilities only performed minor services. During our review, we found that some of the

¹ The maintenance hangar was leased by Air Midwest; however, Air Midwest contracted with a non-certificated company to operate the facility. The actual maintenance on the aircraft was performed by contract mechanics hired by the non-certificated company.

minor services non-certificated facilities perform include work such as checking engine oil levels, welding of parts, or changing tires. However, we also found that non-certificated facilities can, and often do, perform the same type of work as FAA-certificated repair stations, including both scheduled and critical maintenance. Some of the critical repairs we identified that non-certificated repair facilities perform include engine replacements and adjustments to flight control systems.

Permitting non-certificated facilities to perform critical maintenance is an important issue that FAA needs to address because non-certificated repair facilities are not required to have the same systems of quality control and oversight that are present in air carrier operations, or FAA-certificated facilities. For example, non-certificated facilities have no requirement to employ individually designated supervisors and inspectors to monitor maintenance work as it is being performed.

Also, neither FAA nor the six air carriers we reviewed provided adequate oversight of the work that non-certificated facilities performed. In fact, the six air carriers we reviewed relied primarily on telephone contact to monitor maintenance work performed by non-certificated facilities rather than on-site reviews of the actual maintenance work. In contrast, air carriers often assign on-site staff to monitor major work performed at certificated repair stations. In addition, FAA inspectors assigned to oversee air carriers also visit certificated repair stations to monitor the work performed on air carriers' aircraft. Further, work performed in air carrier in-house facilities receive continuous monitoring by both FAA and air carrier representatives. Despite the differences in quality control and oversight that exist between certificated and non-certificated repair facilities, there are no limitations on the scope of work non-certificated facilities can perform. On the contrary, FAA limits the work a certificated repair station can perform to those maintenance tasks it has verified that the facility can perform.

In our view, FAA needs to decide whether non-certificated repair facilities should be performing scheduled or critical maintenance tasks or whether these facilities should be limited in the scope of work they can perform. This is important because FAA requires multiple controls at FAA-certificated repair facilities that traditionally performed scheduled and critical maintenance. It is imperative that FAA make these determinations because it does not know the full extent of the work performed by non-certificated facilities. However, our results clearly demonstrate that non-certificated facilities perform more sophisticated maintenance than FAA originally thought.

In a November 18, 2005 meeting, FAA officials stated they generally agreed with our recommendations, but emphasized that aircraft maintenance, including work performed at non-certificated facilities, must be approved by mechanics holding an FAA mechanic's certificate. While this may be true, it is not an adequate

substitute for an FAA-certificated repair facility because non-certificated facilities do not have the safeguards and controls for maintenance repair and oversight that is required at FAA-certificated facilities, such as quality control systems to ensure maintenance is properly performed.

In addition, relying solely on the expertise of an individual mechanic to ensure repairs are completed properly is an inadequate control mechanism. In our view, this is the reason FAA requires added layers of oversight in FAA-certificated facilities, such as, designated supervisors and inspectors. In their response, FAA officials also stated that the work performed at non-certificated entities is an extension of the air carriers' maintenance program; however, we found that neither the air carriers, nor FAA provided oversight of the work performed at these facilities as they would work performed in the air carriers' in-house facilities or at FAA-certificated repair stations.

Non-Certificated Facilities Operate Without the Same Regulatory Requirements as Certificated Repair Stations. As shown in Table 1, there are key regulatory differences in the operation of a certificated repair station and a non-certificated repair entity. FAA

performs inspections of FAA-certificated repair stations to ensure they maintain detailed records on the work performed; have the appropriate equipment, housing and staff to perform the work; and have a quality control system to ensure work is performed properly. In contrast, inspections of non-certificated facilities are not covered as part of FAA's routine oversight program. In other words,

requirements that come with obtaining an FAA repair station certificate provide an additional layer of controls that are lacking at non-certificated facilities.

Non-Certificated Repair Facilities Operate With No Limitations on the Type or Scope of Work They Can Perform. Air carriers have used non-certificated facilities for years, but it was widely accepted that these facilities were principally used to perform minor maintenance tasks. For example, at the beginning of our review, FAA conducted phone surveys of air carriers to determine the type of work non-certificated repair facilities perform and advised us that these facilities only perform minor repair functions such as analyzing oil for contaminants. We found that this is not true in today's environment. Of the 3 foreign and 7 domestic non-certificated facilities we visited, all 10 were contracted to perform "on-call"

Table 1. Examples of Differences in Requirements for Certificated and Non-Certificated Facilities

FAA Requirement	Certificated Repair Station	Non-Certificated Repair Facility
<i>Quality Control System</i>	Required	Not Required
<i>Designated Supervisors & Inspectors</i>	Required	Not Required
<i>Training Program</i>	Required (FY 2006)	Not Required

maintenance services for the air carriers in locations where certificated maintenance sources were not available. The contracts between the air carriers we reviewed and the non-certificated repair facilities they used did not limit the scope of work these facilities could perform.

In addition, six of these facilities also performed scheduled maintenance tasks, and one performed critical maintenance. As part of our review of air carrier maintenance records, we identified 20 additional non-certificated facilities performing critical maintenance work, such as repairs to parts used to measure airspeed and repairs to aircraft doors. Other examples of work we identified that non-certificated facilities perform include:

- On-call maintenance:
 - Replacing aircraft tires
 - Resetting circuit breakers
 - Servicing engine fluids
- Scheduled maintenance:
 - Detailed interior and exterior checks that verify the airworthiness of the aircraft
 - Daily checks to evaluate wings, engine, landing gear, and flight control systems for damage
 - Inspections of crew and passenger oxygen, aircraft fuselage, wings, and engines for discrepancies at prescribed time intervals
 - Repairs to hydraulic valves required by FAA Airworthiness Directives
- Critical aircraft repairs:
 - Removing and replacing an engine
 - Replacing flight control motors
 - Removing and replacing aircraft doors

Given that air carriers operate multiple flights all over the world, it is understandable that non-certificated repair facilities could be used to perform on-call maintenance at locations where certificated repair stations do not exist. However, we are concerned that air carriers rely on non-certificated facilities to perform scheduled maintenance tasks, such as those required for compliance with an FAA Airworthiness Directive or critical maintenance such as removing and replacing an engine. FAA developed operating and training standards for facilities it certifies to gain greater assurance that critical repairs would be performed according to FAA and air carrier standards. Non-certificated facilities are not

required to operate under the same regulatory parameters as FAA-certificated repair stations.

FAA Does Not Monitor the Maintenance Performed by Non-Certificated Facilities. Non-certificated facilities performing critical maintenance creates a double standard because certificated repair stations are required to have designated supervisors, inspectors, return-to-service personnel, and quality control systems. No such requirements apply to non-certificated facilities. The regulatory disparity between these two groups takes on added importance as non-certificated facilities perform more sophisticated maintenance work and are no longer associated with just on-call maintenance.

Further, non-certificated repair facilities are not covered under FAA's routine oversight program for repair stations. FAA has taken the position that since it has not certificated these facilities, oversight of the work performed by non-certificated facilities rests solely with the air carrier using them. However, we 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.

We disagree that FAA does not have oversight responsibility for non-certificated repair facilities. FAA acknowledges it *does* have responsibility for oversight of air carriers' aircraft maintenance programs and that when air carriers use external maintenance facilities, those facilities become an extension of air carriers' maintenance programs. Yet, FAA does not track the amount or type of work non-certificated facilities perform and does not maintain information on where these facilities are located. It relies on air carrier training and oversight to ensure maintenance is performed properly at these facilities.

Air Carrier Training and Oversight Programs at Non-Certificated Facilities Are Inadequate. While FAA relies on air carrier training and oversight programs, we found significant shortcomings in all six air carrier programs we reviewed. Examples of these shortcomings follow.

- Training of mechanics ranged from a 1-hour video to 11 hours of combined video and classroom training. One U.S. air carrier mailed a workbook to each non-certificated facility and told the mechanics to read the information and fax back a signed form indicating they had completed the carrier's training. Conversely, some *foreign* air carriers require mechanics to have 2 months of training before they can work on the carrier's aircraft.

The training air carriers provided to mechanics at non-certificated facilities before they complete critical repairs was particularly problematic. FAA requires that mechanics performing critical repairs² receive specialized training on those repairs. However, we found that mechanics at non-certificated repair facilities were not receiving detailed training on this type of maintenance work. Typically, air carriers only provided mechanics at non-certificated facilities with telephone briefings to perform this maintenance.

- Air carrier oversight of non-certificated facilities was limited. One of the six air carriers we reviewed performed no oversight of its non-certificated facilities. The other five air carriers did perform evaluations of the facility operations (e.g., reviewed tool calibration and fulfillment of air carrier training) but did not review the actual maintenance work the facilities performed to ensure they met air carrier requirements. One air carrier used a 2-page checklist of superficial questions requiring a “yes” or “no” response as its audit of the facility’s work. For example, one question on the checklist was “Does the vendor have a fax machine?”

According to FAA officials, when an FAA-certificated mechanic performs work for an air carrier, the mechanic does so under the quality system of the air carrier and becomes an extension of the air carrier’s maintenance organization. While this may be true, the air carrier quality systems we reviewed could be improved, specifically with respect to the training air carriers provided mechanics at non-certificated facilities and the oversight provided of the work they performed. Our concerns were reinforced by examples of discrepancies we identified when we reviewed maintenance records for 6 air carriers and 10 repair facilities. These discrepancies included cases of improper maintenance procedures, overlooked maintenance discrepancies, and incorrect logbook entries. For instance, our review of one air carrier’s maintenance records disclosed a non-certificated facility that overlooked at least five major maintenance discrepancies (e.g., burn marks on a flight control system) while performing a lightning strike inspection.

Contract Mechanics Receive Less Oversight Than Non-Certificated Facilities.

Another maintenance provider used both directly and indirectly by air carriers is the contract mechanic. The use of contract mechanics results in an increased potential for human error due to lack of specific knowledge of each carriers’ procedures. Yet, because these mechanics move from facility to facility, it is unlikely that air carrier or FAA oversight would coincide with the times these mechanics are on-site at a carrier or repair station.

² We identified critical repairs as those repairs categorized as Required Inspection Items by each air carrier. Required Inspection Items are mandatory maintenance activities that, due to the importance to the overall airworthiness of the aircraft, must be independently inspected by a specially trained inspector after the work is completed.

Safety oversight requires a system of overlapping controls. Both air carrier and FAA oversight are critical to ensure maintenance is performed properly, regardless of where it is performed. However, our audit identified maintenance errors and shortcomings in air carrier training and oversight programs that reinforce our conclusion that FAA needs to consider placing limitations on the type of maintenance non-certificated facilities may perform. Realizing that FAA is facing staffing challenges, both the House and Senate Committees on Appropriations recommended an increase in aviation safety inspectors to provide expanded repair station oversight. While FAA initially may need to place emphasis in this area to better assess air carrier use of non-certificated facilities, the Agency also needs to work closely with air carriers to more effectively target resources to those areas where critical work is performed. To correct the regulatory disparity between certificated repair stations and non-certificated repair facilities, we recommend that FAA take immediate action to:

- inventory air carrier maintenance providers and identify which non-certificated facilities perform critical maintenance functions and scheduled maintenance tasks;
- determine whether it should limit the type of work non-certificated facilities can perform;
- expand its maintenance oversight program to include non-certificated repair facilities if it determines no limitations should be placed on the type or scope of work these facilities can perform;
- as part of their routine oversight process, evaluate air carrier training and oversight programs to determine whether carriers have effective systems in place to ensure work performed by non-certificated facilities is completed in accordance with air carrier and FAA requirements; and
- determine whether air carriers evaluate the background, experience, and qualifications of temporary maintenance personnel.

A detailed list of these recommendations can be found on page 21.

On November 18, 2005, we met with FAA officials to discuss our November 9, 2005, draft report. During this meeting, the Deputy Associate Administrator for Aviation Safety stated that FAA generally agreed with our recommendations and considered them reasonable. However, in its December 5, 2005, written response, FAA did not comment on the recommendations in our report. We are requesting that FAA provide written comments and proposed timetables for corrective action on each recommendation within 30 calendar days.

In its written response, FAA took the position that if maintenance is performed by an FAA-certificated mechanic, the work is done under the quality system of the air carrier and becomes an extension of the air carrier's maintenance organization. While this may be true, we found that air carrier quality systems under which these repairs were performed were not as effective as they should have been. This was particularly true in the areas of mechanic training and oversight of these facilities.

Additionally, while we recognize that maintenance was performed by FAA-certificated mechanics, it is also important to recognize that air carriers contracted with repair facilities—not an individually licensed mechanic—to perform their aircraft maintenance work. FAA's position does not recognize that non-certificated repair facilities are responsible for managing the work performed by its mechanics and are ultimately responsible for ensuring that repairs meet safety and operational requirements.

Also, FAA does not address another important point—non-certificated facilities are performing the same type of work as FAA-certificated repair stations, but do not have to follow the same regulatory requirements as certificated repair stations. In our view, this practice raises important concerns:

- First, the use of non-certificated repair facilities to perform aircraft maintenance presents a dual standard for aircraft maintenance and oversight. FAA requires certificated repair stations to have quality controls systems and designated supervisions and inspectors. Yet, at non-certificated facilities performing the same kind of work as certificated repair stations, FAA appears willing to place primary reliance on individual mechanics to perform a broad range of repairs on multiple types of aircraft and to verify that the maintenance has been properly performed. As demonstrated in the circumstances surrounding the Air Midwest accident, this system is not adequate. FAA-certificated mechanics completed and approved the repairs that are believed to have been a contributing cause of the January 2003 crash. NTSB officials concluded that air carrier and FAA oversight was needed.
- Second, neither FAA nor air carriers were providing adequate oversight of the work performed at the non-certificated facilities we reviewed. FAA views work performed at non-certificated facilities as an extension of the air carrier's maintenance program. However, unlike maintenance performed in-house, air carriers we reviewed monitored critical maintenance work performed by non-certificated facilities through telephone communications. This would not be the case if the work were performed in an FAA-certificated repair station or the air carriers' in-house facilities. FAA's full response can be found on page 29 of the report.

BACKGROUND

Currently, FAA has certificated over 5,000 foreign and domestic repair stations that perform aircraft repairs for U.S. air carriers. In addition to these certificated repair stations, an unknown number of repair facilities that have not obtained FAA certification also perform work for U.S. air carriers. FAA regulations permit air carriers to use non-certificated repair facilities as long as the mechanics approving the repairs are A&P (Airframe and PowerPlant) certificated and the air carrier provides oversight of the work performed.

To oversee outside maintenance facilities used by U.S. air carriers, FAA relies on a series of overlapping controls. First, at FAA-certificated repair stations, FAA inspectors perform yearly inspections to ensure there are adequate facilities, staffing, and equipment to complete air carrier maintenance. Second, FAA provides oversight of work performed by individually certificated mechanics at both certificated repair stations and non-certificated facilities. Third, FAA inspectors monitor air carrier operations, including verifying that air carriers have a system in place to ensure that outside repair facilities are performing the work in accordance with maintenance requirements.

In July 2003, we reported³ that FAA needed to obtain data so it could determine trends in air carriers' use of repair stations, determine which repair stations are used the most, and adjust its surveillance accordingly. We also reported that FAA needed to modify its process for repair station oversight. Although FAA has fully implemented only one of the nine recommendations in our report, it has plans underway to develop a more comprehensive, risk-based system for repair station oversight. Exhibit B provides further information on our prior audit and the progress FAA has made in implementing our recommendations. At the request of Representative Oberstar, we performed this review to evaluate FAA's progress in implementing those recommendations.

FINDINGS

Requirements for Certificated Repair Stations and Non-Certificated Repair Facilities Differ Significantly, Yet There Are No Limitations on the Type of Maintenance Non-Certificated Repair Facilities Can Perform

The maintenance outsourcing most people are familiar with, and that we have previously reported on, involves aircraft repair facilities that are certificated by

³ OIG Report Number AV-2003-047, "Review of Air Carriers' Use of Aircraft Repair Stations," July 8, 2003. OIG reports can be found on our website: www.oig.dot.gov.

FAA. FAA has evaluated these facilities to verify that they have the staff and equipment to complete the type of maintenance work the facility is approved to perform. FAA records indicate that it has certificated over 5,000 domestic and foreign repair stations to perform aircraft maintenance for U.S. air carriers. However, there is another segment of the repair industry that is widely used by air carriers in the United States and other countries—repair facilities that have not been certificated by FAA. These facilities are neither certificated nor routinely reviewed by FAA, and FAA does not know how many of these facilities U.S. air carriers use, or the type of work they perform.

FAA-certificated repair stations must adhere to FAA requirements to retain their FAA certificate. For example, an FAA-certificated repair station must:

- maintain detailed records on the work performed, including the signature and certificate number of the person that performed the work;
- have a quality control system to ensure work is performed properly, and
- provide a training program for its mechanics (beginning in April 2006).

In contrast, non-certificated repair facilities are maintenance organizations that perform aircraft maintenance work without certification from FAA. Non-certificated facilities are:

- typically staffed with at least one *FAA-certificated mechanic* (i.e., a mechanic who has passed written and practical tests and received a certificate from FAA showing he or she is qualified to perform maintenance);
- not bound by FAA operating requirements, such as maintaining a quality control system; and
- not required to have a facility in which to operate. In fact, of the 10 entities we visited that were not certificated repair stations, two were simply one mechanic, a truck, and basic tools.

As shown in Table 2, there are other key differences between requirements for non-certificated facilities and FAA certificated repair stations.

Table 2. Differences in Requirements for FAA-Certificated Repair Stations and Non-Certificated Facilities

Requirement	Certificated Repair Station	Non-Certificated Facility
FAA Inspections	Annual inspection required	No requirement
Quality Control System	Must establish and maintain a quality control system that ensures that repairs performed by the facility or a subcontractor are in compliance with regulations	No requirement
Reporting Failures, Malfunctions, and Defects	Must report failures, malfunctions, and defects to FAA within 96 hours of discovery	No requirement
Personnel	Must have designated supervisors, inspectors, and return-to-service personnel	No requirement
Training Program	Required starting April 2006	No requirement
Facilities and Housing	If authorized to perform airframe repairs, must have facilities large enough to house the aircraft they are authorized to repair	No requirement

Although non-certificated repair entities lack FAA certification and regular FAA oversight, there are no limitations on the type of work these facilities may perform. Contracts between air carriers and domestic and foreign non-certificated facilities that we reviewed were open-ended and contained broad language such as “perform on-call aircraft maintenance as needed.” Under these agreements, non-certificated repair facilities also performed scheduled aircraft maintenance. For example, a non-certificated facility in Mexico performed daily maintenance checks on U.S. aircraft that included checking the aircraft wings, engine, landing gear, and flight controls for damage. Air carriers also used non-certificated repair facilities to perform critical repairs, such as replacing a flight control motor.

Our review of maintenance performed at non-certificated repair facilities disclosed improper maintenance procedures, overlooked maintenance discrepancies, and incorrect logbook entries. For example, one facility performed an improper maintenance procedure on an engine start switch that could have resulted in the flight crew’s inability to relight the engine during flight. As part of its safety oversight of air carriers, FAA is required to ensure aircraft maintenance is performed properly. For non-certificated repair facilities, FAA relies on air carrier training and oversight to achieve this goal.

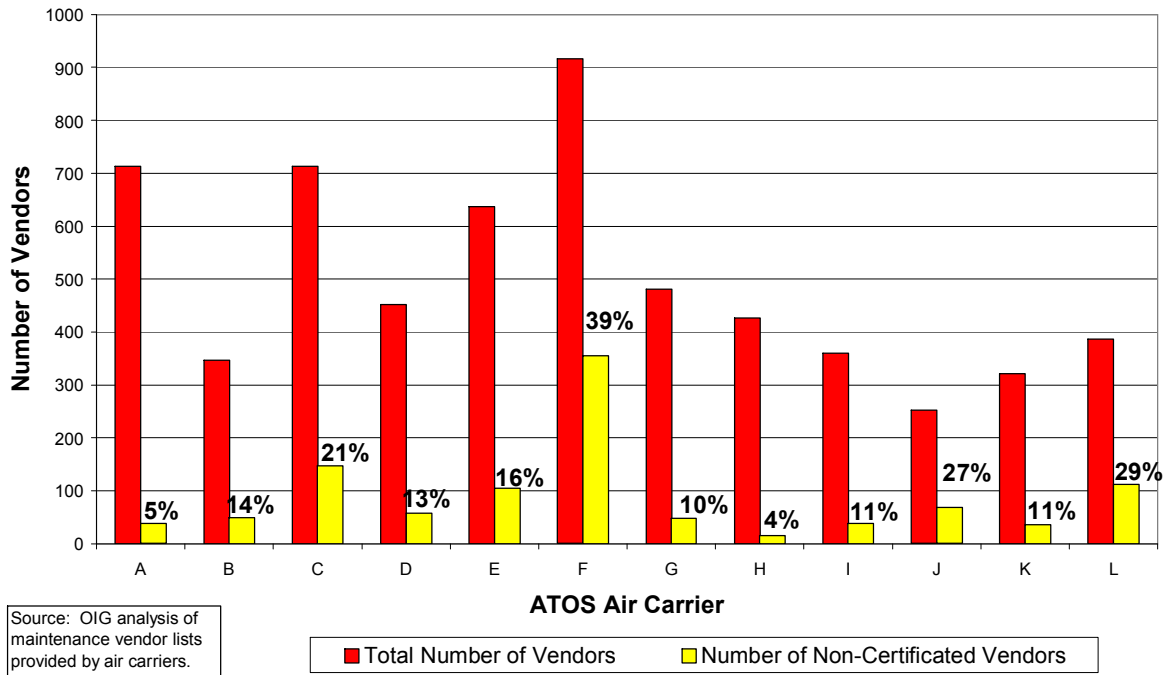
However, when an air carrier uses an aviation maintenance facility, whether it is FAA-certificated or not, it becomes in effect an extension of the carrier's maintenance program. While the air carrier is ultimately responsible for the oversight of the maintenance performed on its aircraft, FAA is responsible for ensuring that the air carriers have effective systems in place to monitor this work. This is typically achieved through on-site visits of the air carrier's maintenance providers. However, because FAA officials assert that the Agency has no authority to inspect non-FAA-certificated facilities, it does not perform annual inspections of these operations. In fact, FAA had not inspected 6 of the 10 domestic and foreign non-certificated facilities we reviewed. During fiscal years 2003 and 2004, we identified a total of 104 foreign non-certificated facilities performing aircraft maintenance for 3 of the air carriers we reviewed. Yet FAA had never inspected any of these facilities.

FAA Did Not Know That Non-Certificated Repair Facilities Performed a Broad Range of Maintenance Activities

Based on a phone survey of nine air carriers, FAA determined that carriers only used non-certificated repair facilities to perform limited repair functions, such as welding. However, our review of 19 air carriers disclosed that air carriers use domestic and foreign non-certificated repair facilities to perform significantly more than just basic repairs. As shown in Figure 1, the number of non-certificated vendors approved by Air Transportation Oversight System (ATOS)⁴ air carriers to perform aircraft maintenance ranged from 4 percent to 39 percent of the total number of maintenance vendors.

⁴ ATOS is FAA's data-driven, risk-based approach to air carrier safety oversight. Passenger air carriers currently under ATOS are Alaska, America West, American, American Eagle, Champion Air, Continental, Delta, Go Jet, Express Jet, Northwest, Skywest, Southwest, Transtates, United, and US Airways.

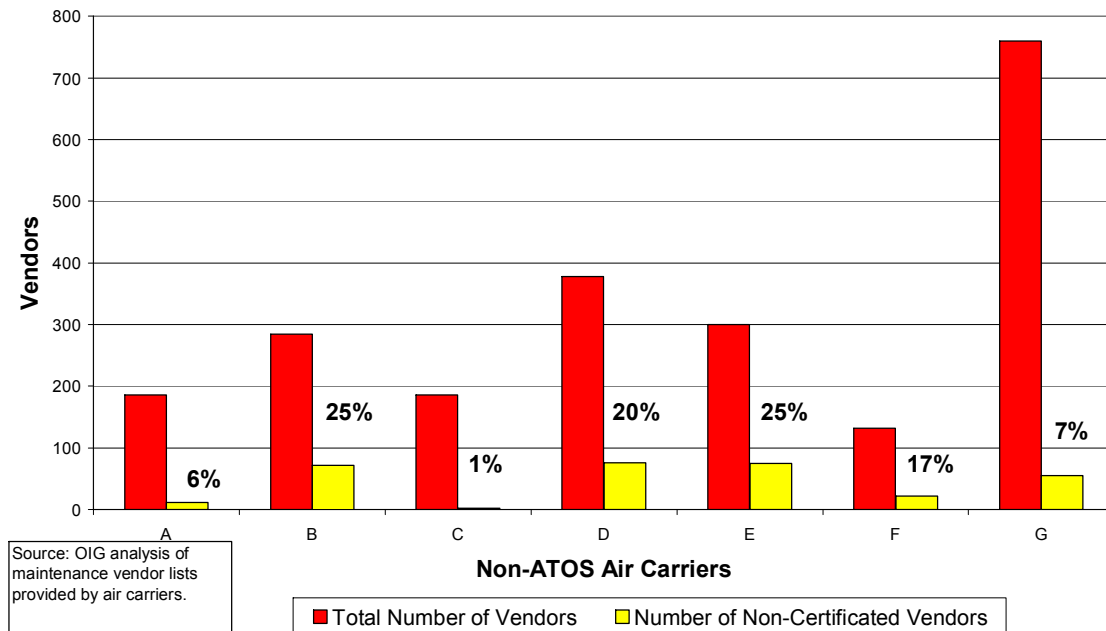
Figure 1. Percentage of Non-Certificated Vendors Used by ATOS Air Carriers



Note: The chart above depicts the number of non-certificated vendors with which the air carrier has contracted. It does not represent the actual volume of work performed.

Some of the air carriers illustrated in Figure 1 are the same carriers FAA interviewed to determine their use of non-certificated facilities. In addition to ATOS air carriers, we also reviewed maintenance vendor lists from a sample of other air carriers (i.e., low-cost, regional, and commercial) to obtain a more balanced look at the use of these facilities throughout the aviation industry. As shown in Figure 2, our review disclosed that the use of non-certificated facilities was also common among other air carriers in the industry.

Figure 2. Percentage of Non-Certificated Vendors Used by Non-ATOS Air Carriers



Note: The chart above depicts the number of non-certificated vendors with which the air carrier has contracted. It does not represent the actual volume of work performed.

Air carriers generally use non-certificated repair facilities because (1) an airport used by the air carrier does not have certificated repair stations available to perform the work, (2) the type of work performed is unique to that facility (e.g., oil analysis and welding), or (3) non-certificated facilities are less expensive because they do not have the same overhead cost constraints as certificated repair stations.

While non-certificated facilities were previously believed to perform only minor maintenance tasks, we determined that these facilities are now used to perform not only on-call maintenance but also scheduled maintenance (e.g., inspections of crew and passenger oxygen, aircraft fuselage, wings, and engines for discrepancies at prescribed time intervals) and critical repairs (e.g., replacement aircraft engines). As shown in Table 3, all of the 10 non-certificated repair facilities we visited performed on-call maintenance for multiple air carriers. In addition to on-call maintenance, six performed scheduled maintenance (i.e., maintenance that is required to be performed at regularly scheduled times, such as inspections required after the aircraft has flown a designated number of hours) for U.S. air carriers.

Table 3. Types of Maintenance Performed at Selected Domestic and Foreign Non-Certificated Repair Facilities

Non-Certificated Repair Facility	No. of Air Carriers Using Facility	Performed On-Call Maintenance	Performed Scheduled Maintenance
A	5	Yes	Yes
B	2	Yes	No
C	1	Yes	Yes
D	10	Yes	No
E	3	Yes	Yes
F	4	Yes	No
G	5	Yes	Yes
H	4	Yes	Yes
I	2	Yes	No
J	7	Yes	Yes

We also identified non-certificated facilities that performed repairs that were so important to the overall airworthiness of the aircraft that FAA requires a special inspection be performed on the aircraft once the repairs are completed. Some examples of this work include:

- 14 of the 19 (74 percent) critical repairs (i.e., performed with a one-time Required Inspection Item Authorization) performed for an air carrier during a 3-year period were done by non-certificated repair facilities. Examples of the work performed include landing gear checks, lightning strike inspections, and door slide replacements.
- 16 of the 45 (36 percent) critical repairs performed for another air carrier from March 2003 to October 2004 were done by non-certificated repair facilities. Examples of this work included removing and replacing parts used for flight controls, parts used to measure airspeed, and aircraft doors.
- One non-certificated facility completed maintenance tasks required by an Airworthiness Directive on three aircraft operated by a U.S. air carrier. The carrier had advance notice of this maintenance requirement but still elected to use a non-certificated facility to complete the work. The maintenance work was required to prevent failure of the hydraulic shut-off valve, which could have resulted in leakage of hydraulic fluid into the engine fire zone, a reduced ability to retract landing gear, a loss of backup electrical power, and consequently the reduced controllability of the aircraft.

These critical repairs were completed by FAA-certificated mechanics. However, these mechanics did not receive the same air carrier training that was provided for other mechanics performing the same type of critical repairs. For example, one air carrier we reviewed provided in-house mechanics with 6 hours of specialized training and required the mechanics to receive recurrent training every 24 months to receive and retain authorization to complete critical repairs. This same carrier authorized mechanics at non-certificated facilities to complete these repairs after only giving the mechanics a telephone briefing. This practice is contrary to FAA requirements which state that air carrier policies and procedures for authorizing mechanics to perform these types of repairs must not differ regardless of whether the work is performed by in-house mechanics or mechanics at a contract maintenance organization.

In addition, some of the work described previously was completed by non-certificated facilities outside the United States. For example, two of the facilities depicted in Table 3 that were performing *scheduled maintenance* for U.S. air carriers were foreign repair facilities. One facility performed over-water preflight check procedures before every outbound flight on a U.S. air carrier's aircraft. This type of scheduled maintenance is important to ensure that all over-water safety equipment, such as life vests and survival kits, is available and functioning properly. We also identified non-certificated facilities in St. Thomas, Bermuda, and El Salvador that performed *critical repairs*, such as replacing an engine electronic control unit, for a U.S. air carrier. FAA had never visited any of these foreign maintenance providers.

FAA Relies on Air Carrier Training and Oversight Programs To Ensure Work at Non-Certificated Facilities Is Performed Properly, but the Programs Must Be Strengthened

FAA asserts that it does not have oversight responsibility for non-certificated repair facilities because they have not been certificated by FAA. This is a perplexing assertion given that FAA's primary responsibility is aviation safety. Any maintenance performed by an external repair facility becomes an extension of the air carrier's maintenance program. However, instead of providing oversight of these facilities, FAA inspectors rely on training that air carriers provide to mechanics at non-certificated facilities and air carrier oversight programs to ensure that work is performed properly.

However, we found that the air carrier training and oversight programs we reviewed are inadequate. This is particularly true of oversight and training of contract mechanics used by repair stations and air carriers to meet peak workloads. The use of contract mechanics increases the potential for maintenance errors because the mechanics are not familiar with the maintenance procedures of the air

carrier for which they are performing the work. Additionally, because contract mechanics are transient by necessity, it is unlikely that FAA or air carrier oversight would occur at the same times these mechanics are actually performing the work.

The training air carriers provide on their maintenance practices and the audit programs used to evaluate the work performed by non-certificated repair facilities and contract mechanics are not as comprehensive as they should be. For example, we reviewed training programs for eight domestic air carriers to determine the level of training provided to mechanics at non-certificated facilities on air carrier maintenance procedures. As shown in Table 4, air carrier training ranged from a 1-hour training video to a total of 11 hours of combined video and classroom training. One air carrier merely provided a maintenance procedures workbook to each facility and told the mechanics to read the information and fax back a signed form indicating they had completed the training.

Table 4. Air Carrier Training

<u>Carrier*</u>	<u>Training Provided</u>
A	Less than an hour of video training
B	1.5 hours of classroom training
C	11 hours of combined classroom and video training
D	3.5 hours of combined classroom and video training
E	Maintenance procedures provided in a workbook that had to be signed and faxed back to the air carrier
F	3 to 4 hours of combined classroom and video training
G	4 hours of classroom training
H	3.5 hours of classroom training

* Air carrier letter does not necessarily designate the same carrier throughout the report.

Air carrier training provides mechanics with the procedures they must follow when working on an air carrier's aircraft. For example, part of the training instructs mechanics on procedures for preparing aircraft logbook entries when completing aircraft repairs. These logbooks are the maintenance history of the aircraft and, as such, must be properly maintained so that any repeat maintenance discrepancies can be easily identified.

Error-free documentation is vital to aviation safety and maintenance error-prevention. As shown in Table 5, we identified a number of incidents in which mechanics at non-certificated facilities incorrectly prepared logbook entries.

Table 5. Examples of Logbook Errors by Mechanics at Non-Certificated Repair Facilities

Logbook Discrepancy	Improper Action Taken by Mechanic	Significance of Event
Improper representation of the work performed	Logbook page incorrectly stated that a repair was performed when it had actually been deferred.	The improper logbook entry meant the pilot did not know that the aircraft had a malfunctioning aircraft control system.
Failure to enter discrepancy identified or corrective action taken	Inspected forward cargo door seal but never entered the discrepancy or the outcome of the inspection into the logbook.	The aircraft logbook did not fully represent all maintenance and inspections performed on the aircraft, which are important for trend analysis of repetitive problems.
Proper maintenance procedures were not entered in logbook.	Reset a tripped fuel boost-pump circuit breaker without following proper procedures or entering proper procedures in logbook.	Performing this repair without following the proper procedures could cause a fire or fuel tank explosion.

These logbook errors indicate that the level of training that air carriers are currently providing to these mechanics is not adequate.

Our review of training records and interviews with mechanics at non-certificated repair facilities disclosed that foreign air carriers tend to provide *more detailed training* to mechanics than U.S. air carriers. For example:

- A mechanic at a non-certificated facility informed us that one foreign carrier required him to complete 160 hours of training before he could work on its aircraft.
- Another mechanic stated he was required to take a 2-month training course from another foreign air carrier before he could work on that carrier's aircraft.

Domestic carriers typically only require mechanics to be licensed by FAA and receive training on air carrier policies and procedures before they are eligible to

work on the carriers' aircraft, but that training varies significantly from carrier to carrier and is very limited at best.

In addition to the fact that air carriers provide only limited training to mechanics at non-certificated facilities, air carriers we reviewed performed inadequate oversight of these facilities. For example, all but one of the six air carriers we reviewed evaluated whether the mechanics had received the air carriers' policies and procedures training, but only one carrier actually reviewed logbook pages to ensure they were prepared correctly. One air carrier did not perform audits of *any* of its non-certificated facilities.

FAA requires air carriers to establish and maintain a system to monitor the effectiveness of their aircraft maintenance and inspection programs. This system should minimally include an internal audit function and a process to monitor the mechanical performance of the aircraft fleet. As part of the audit function, each carrier should review the actual work performed to ensure that all maintenance, including work completed by outside maintenance providers, meets the carriers' approved maintenance procedures and FAA requirements. Some key audit areas identified by FAA include: deferred maintenance management, maintenance task accomplishment, maintenance records, and training programs.

However, the audit systems used by air carriers to evaluate non-certificated facilities that we reviewed did not address some of the key audit areas established by FAA. For example, the procedure used by one air carrier to perform audits consisted of a two-page checklist of superficial questions that only require a "yes" or "no" response. One of the questions on the checklist was "Does the vendor have a fax machine?" Additionally, none of the six air carriers we evaluated reviewed the actual maintenance performed as part of their audit of the non-certificated facilities. In fact, as shown in Table 6, none of the air carriers we evaluated addressed each of the four key audit areas relative to these facilities.

Table 6. Air Carrier Audits of Non-Certificated Facilities

Air Carrier	Audit Frequency	* Did the Air Carrier Audit:			
		Calibration of Tools / Equipment?	Whether Maintenance Records Were Completed Per Carriers' Procedures?	Whether Maintenance Personnel Were Properly Trained?	Whether Maintenance Was Performed Per Requirements?
A	12 months	Yes	Yes	Yes	No
B	13 months**	Yes	No	Yes	No
C	None performed	No	No	No	No
D	12 months	Yes	No	Yes	No
E	12 months	Yes	No	Yes	No
F	24 months	Yes	No	Yes	No

* Recommended audit areas per FAA Guidance, AC 120-79, "Developing and Implementing a Continuing Analysis and Surveillance System," April 21, 2003.

** Audits specifically state "not an in-depth inspection."

Maintenance Performed by Contract Mechanics Is Not Adequately Monitored by Air Carriers or FAA

Another common but not widely recognized element in the aircraft maintenance industry is the use of contract, or temporary maintenance personnel. Because maintenance facilities, certificated or not, can have fluctuating workloads, air carriers and repair facilities turn to temporary workers to meet peak workloads.

We found that contract mechanics are typically used for three reasons. First, air carriers hire them to supplement their own workforce during peak work periods. One aviation labor company we visited supplies mechanics to at least 10 commercial passenger air carriers. Second, some carriers use contract mechanics to perform on-call maintenance. We identified one contract mechanic who performed on-call maintenance for three major U.S. air carriers in Florida. Third, contract mechanics are also used by FAA-certificated repair stations during peak work periods. For example, of the 1,500 mechanics employed by one major FAA-certificated repair station in North Carolina, approximately 200 (13 percent) were contract mechanics.

Contract mechanics move from one organization to another as needed and have become a significant workforce in the contract maintenance environment. However, these temporary workers must learn a new set of procedural tasks every time they change contracts or facilities. According to an FAA-commissioned study,⁵ this is a situation that could lead to maintenance errors. When temporary personnel are a substantial part of the mechanic workforce, the potential for human error due to lack of specific knowledge increases. These mechanics' lack of specific knowledge can be attributed to inadequate training and the fact that the mechanics jump back and forth between General Maintenance Manuals and procedures for the individual airline customers and aircraft types. However, because contract mechanics are transient by necessity, it is unlikely that oversight provided by air carriers or FAA inspectors would coincide with the times these mechanics are on-site at a carrier or repair station.

RECOMMENDATIONS

Non-certificated repair facilities perform the same type of maintenance that certificated repair stations perform but without the regulatory oversight. To correct the disparity between these two types of operators, the Federal Aviation Administrator should take immediate action to:

1. Inventory air carrier vendor lists that include all maintenance providers working on air carrier aircraft and identify non-certificated repair facilities performing critical or scheduled maintenance.
2. Determine whether it should limit the type of work non-certificated facilities can perform.
3. Expand its maintenance oversight program to include non-certificated repair facilities if no limitations are placed on the type or scope of work they perform.
4. Review air carrier training programs as part of FAA's oversight of air carrier operations to ensure mechanics at non-certificated repair facilities:
 - are qualified to maintain aircraft in accordance with FAA and air carrier requirements and

⁵ Study conducted by Northwestern University, "Practices and Perspectives in Outsourcing Aircraft Maintenance," March 2003.

- receive training for critical repairs that is equivalent to the training provided to air carrier mechanics performing the same type of repairs.
5. Review air carrier training programs to ensure mechanics at non-certificated repair facilities have been adequately trained on preparing maintenance records in accordance with FAA and air carrier procedures.
 6. Review air carriers' audit programs for non-certificated repair facilities as part of its oversight of air carrier operations to ensure each carrier has established a standard and in-depth process for evaluating these facilities.
 7. Determine whether air carriers evaluate the background, experience, and qualifications of the temporary maintenance personnel used by contractors to ensure the work they perform is completed in accordance with FAA and air carrier requirements.

AGENCY COMMENTS AND OFFICE OF INSPECTOR GENERAL RESPONSE

On November 18, 2005, we met with FAA officials to discuss the November 9, 2005, draft report. During this discussion, FAA officials generally agreed with our recommendations. FAA representatives, including the Deputy Associate Administrator for Aviation Safety and the Director of Flight Standards Service, also acknowledged that the recommendations were reasonable and the Agency would be able to accomplish the recommended actions. However, in its written response, FAA did not comment on the recommendations in our report.

On December 5, 2005, FAA provided written comments to our report. FAA's full response can be found in the Appendix. In its written comments, FAA stated that our report overlooked the fact that the maintenance work completed at non-certificated facilities was actually performed by mechanics that hold FAA certificates. FAA stated that certificated mechanics must possess fundamental knowledge, meet experience requirements, and pass oral, practical, and written tests to be certificated. Further, FAA stated that in many instances, air carriers take advantage of the proven experience levels of certificated mechanics to provide maintenance services at stations where air carriers do not assign permanent personnel.

We agree that FAA-certificated mechanics help to ensure repairs are performed properly at all facilities, including maintenance performed at air carrier facilities. However, using FAA-certificated mechanics is only the first level of quality

control that ensures aircraft are properly maintained. Air carriers and certificated repair stations also rely on Quality Control Systems, multiple levels of oversight, and recurring mechanic training to ensure that repairs are performed properly. Non-certificated entities do not have these same controls.

In its written comments, FAA also stated that when an FAA-certificated mechanic performs work for an air carrier, he or she does so under the quality system of the air carrier and becomes an extension of the air carrier's "organization." Additionally, FAA states that use of FAA-certificated mechanics provides a fundamental level of safety that has been utilized for many years with no adverse impact on safety.

While we recognize that non-certificated repair facilities are considered extensions of air carriers' maintenance organizations, we found that the air carrier quality systems under which this work was performed were not as effective as they should have been. This was particularly true of the training air carriers provided to mechanics at non-certificated repair facilities and the oversight process air carriers used to ensure the work performed at these facilities was done properly. Further, it is important to recognize that air carriers contract with *repair facilities*—not an individually licensed *mechanic*—to perform their aircraft maintenance work. FAA's position fails to recognize that non-certificated repair facilities are responsible for managing and overseeing the work performed by FAA-certificated mechanic within their facility. As a result, non-certificated repair facilities are responsible for ensuring that aircraft repairs meet safety and operational requirements.

ACTION REQUIRED

In accordance with Department of Transportation Order 8000.1C, we request that FAA provide formal comments on each recommendation along with estimated target action dates. We would appreciate receiving your response within 30 calendar days. We appreciate the cooperation of FAA representatives during this audit. If you have any questions concerning this report, please contact me at (202) 366-1959 or David A. Dobbs at (202) 366-0500.

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EXHIBIT A. SCOPE AND METHODOLOGY

The audit fieldwork was conducted from April to December 2004 at FAA Headquarters, five Certificate Management Offices, and three Flight Standards District Offices. In addition, we visited offices for four ATOS air carriers and two non-ATOS air carriers. We also visited seven domestic non-certificated repair facilities, three foreign non-certificated repair facilities, and one aviation labor company.

To evaluate FAA's oversight of non-certificated repair facilities, we interviewed inspectors at the Certificate Management Offices and Flight Standards District Offices to determine how they oversee air carriers' use of non-certificated repair facilities. We also obtained and reviewed inspection databases, enforcement investigative reports, and FAA regulatory requirements.

To determine the extent to which air carriers use non-certificated repair facilities, we obtained and reviewed maintenance vendor lists for 12 ATOS and 7 non-ATOS air carriers. We determined the number of non-certificated maintenance vendors approved by each air carrier. We also determined the location of the non-certificated vendors and the type of work they performed for the carriers.

Our review of air carrier operations consisted of interviewing key personnel in maintenance, training, and quality assurance departments. We obtained and reviewed air carriers' maintenance manuals that pertained to on-call maintenance providers. We also obtained and reviewed training records to determine the type of training provided to on-call maintenance vendors, and we reviewed audits of non-certificated facilities to determine the thoroughness of the audits performed.

To select non-certificated repair facilities to visit, we identified airports that did not have an FAA-certificated repair station and were used by multiple air carriers. To evaluate non-certificated repair facility operations, we interviewed facility managers, obtained and reviewed recent work orders to determine the type of repairs performed on U.S. registered aircraft, obtained contracts with U.S. air carriers to determine scope of responsibility, and evaluated mechanic training records to determine air carrier and aircraft-specific training.

We performed the audit in accordance with Generally Accepted Government Auditing Standards prescribed by the Comptroller General of the United States. Our audit included such tests of procedures and records as we considered necessary.

EXHIBIT B. STATUS OF FAA IMPLEMENTATION OF REPAIR STATION RECOMMENDATIONS

On July 8, 2003, we issued report AV-2003-047, "Review of Air Carriers' Use of Aircraft Repair Stations," which evaluated FAA's safety oversight of domestic and foreign repair station operations and identified areas in which improvements to FAA's oversight were needed. We determined that airlines were increasingly outsourcing aircraft maintenance to repair stations, but FAA continued to concentrate its inspection resources on maintenance performed at air carriers' in-house facilities. We emphasized the need for FAA to ensure it was channeling its oversight toward organizations actually performing maintenance.

To strengthen safety, we recommended FAA enhance its oversight of domestic repair stations by identifying repair stations performing critical repairs; performing risk assessments of data collected on repair stations and targeting inspector resources; and developing a comprehensive, standardized approach to repair station oversight. To improve its oversight of foreign repair stations, we recommended FAA clarify its inspection documentation procedures and develop procedures to ensure foreign inspectors place adequate emphasis on FAA requirements during inspection.

FAA responded positively to our recommendations and proposed to implement actions that in our opinion would enhance oversight of domestic and foreign repair stations. However, progress has been slow. Currently, FAA has fully implemented only one of our nine recommendations: to modify procedures with foreign aviation authorities to lift the restrictions on the number of sample inspections FAA can perform of FAA-certificated repair stations that are inspected by foreign authorities. FAA has taken several preliminary steps to improve its oversight process, such as establishing Quarterly Utilization Reports which will be filed by air carriers to identify repair stations that perform critical maintenance and those that perform the highest volume of work for each air carrier. Additionally, FAA has developed interim guidance for its inspectors to use until a new formal bilateral agreement with the European Aviation Safety Agency is implemented. The procedures in this interim guidance will improve FAA's ability to monitor the surveillance conducted by foreign aviation authorities on its behalf.

Overall, we believe FAA has taken important first steps but work remains. For example, although FAA has implemented a manual version of its new risk-based oversight system for repair stations, the automated feature that will permit it to analyze data will not be completed until FY 2007. When FAA completes implementation of all proposed actions, repair station oversight will be greatly enhanced.

EXHIBIT C. ENTITIES VISITED OR CONTACTED

Entities Visited

FAA

Headquarters:

Flight Standards Service (AFS) Washington, DC

AFS Certificate Management Offices for:

AirTran Airways	Orlando, FL
American Airlines	Dallas/Fort Worth, TX
American Eagle	Dallas/Fort Worth, TX
Continental Airlines	Houston, TX
Continental Express (Express Jet)	Houston, TX

AFS District Offices for:

Atlantic Southeast Airlines	Atlanta, GA
Frontier Airlines	Denver, CO
Miami Tech	Miami, FL

ATOS Air Carriers

American Airlines	Dallas/Fort Worth, TX
American Eagle	Dallas/Fort Worth, TX
Continental Airlines	Houston, TX
Continental Express (Express Jet)	Houston, TX

Non-ATOS Air Carriers

AirTran Airways	Orlando, FL
Frontier Airlines	Denver, CO

Non-Certificated Repair Facilities

A & P Mechanics Services	Cancun, Mexico
A & P Mechanics Services	Cozumel, Mexico
A & P Mechanics Services	Zihuatanejo, Mexico
AeroTech International Inc.	Fort Meyers, FL
F & E Aircraft Maintenance	Miami, FL
JET Aircraft Maintenance	Fort Meyers, FL
Jett Care	Atlanta, GA
Miami Tech	Miami, FL

SMART
Waner Aviation

Melbourne, FL
West Palm Beach, FL

Aviation Labor Companies

STS Services Incorporated

Jensen Beach, FL

Industry Associations

Air Line Pilots Association

Herndon, VA

Air Transport Association

Washington, DC

International Aircraft Machinists

Seminole, FL

Professional Aviation Mechanics Association

Washington, DC

Other Entities Contacted

FAA

AFS Certificate Management Offices for:

Alaska Airlines

Seattle, WA

America West

Phoenix, AZ

Delta Air Lines

Atlanta, GA

Northwest Airlines

Minneapolis, MN

Sky West

Salt Lake City, UT

Southwest Airlines

Dallas, TX

United Airlines

San Francisco, CA

US Airways

Pittsburgh, PA

AFS District Offices for:

Air Midwest

Wichita, KS

America Trans Air

Indianapolis, IN

JetBlue Airways

New York, NY

Spirit Airlines

Bellevue, MI

ATOS Air Carriers

America West

Phoenix, AZ

Delta Air Lines

Atlanta, GA

Non-ATOS Air Carriers

Atlantic Southeast Airlines

Atlanta, GA

APPENDIX. MANAGEMENT COMMENTS



U.S. Department
of Transportation
**Federal Aviation
Administration**

Memorandum

Subject: **INFORMATION:** Comments on the OIG Draft
Report on Air Carriers' Use of Non-
Certificated Repair Facilities

Date:

From: Associate Administrator for Financial Services
and Chief Financial Officer

Reply to
Attn of:

To: Assistant Inspector General for Aviation and
Special Program Audits

Thank you for giving us the opportunity to review and provide comments on your draft report entitled: Audit of Air Carriers' Use of Non-Certificated Repair Facilities.

We note that the report overlooks what we see as a key element of assuring that aircraft maintenance is performed in accordance with appropriate safety standards. While the report addresses the use of facilities that do not hold FAA Repair Station Certificates, it does not make clear that the maintenance work is actually performed by mechanics that hold FAA certificates. In fact, as we discussed with your staff, we believe that it is critical to aviation safety that an FAA certificated mechanic is involved in the process when work is performed at non-certificated repair facilities. It should also be noted that any approval that returns an aircraft or a product to service must be done by an FAA certificated mechanic or a certificated repair station.

FAA certificated mechanics must possess fundamental knowledge, meet experience requirements and pass oral, practical and written tests to be certificated. Once issued a mechanic certificate, they must also comply with recent experience requirements to exercise the privileges of their certificates. In many instances, air carriers take advantage of the proven experience levels of FAA certificated mechanics to provide maintenance services at stations where air carriers do not assign permanent personnel.

Of the examples contained in the report, maintenance work must either be performed or supervised by an FAA certificated facility or by an FAA certificated mechanic. In those instances, an FAA certificated mechanic is responsible for ensuring that aircraft repair meets safety and operational requirements. The report does not allege, nor provide data to suggest, that the work was not performed by properly certificated mechanics. We believe the report should make this clear.

The report does state that certificated repair stations must demonstrate qualifications that uncertificated facilities do not meet. We agree that certificated repair stations, are certificated to standards requiring facilities, equipment, personnel, and a quality system necessary to support an “organizational” structure. However, when an FAA certificated mechanic performs work for an air carrier, he or she does so under the quality system of the air carrier and becomes an extension of the air carrier’s “organization.” While the report provides examples of deficiencies noted in surveillance of FAA certificated mechanics by air carriers, we believe the use of FAA certificated mechanics provides a fundamental level of safety that has been utilized for many years with no adverse impact on safety.

As discussed and agreed to during the exit conference we will provide to each recommendation action taken or planned and the target date for completion at a later date.

If you have questions or need further information, please contact Anthony Williams, Budget Policy Division, ABU-100. Mr. Williams can be reached at 267-9000.