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“A Review of Aviation Safety in the United States”

Testimony of Gary M. Fortner Vice President of Quality Control & Engineering on behalf of the Aeronautical Repair Station Association Before the U.S. House of Representatives Aviation Subcommittee

April 25, 2012

Chairman Petri, Ranking Member Costello, and members of the Subcommittee, thank you for the invitation to testify this morning about the excellent work repair stations across the country and around the world are doing to ensure aviation safety.

My name is Gary Fortner and I am vice president of quality control and engineering at Fortner Engineering & Manufacturing, Inc., based in Glendale, California. Incorporated in 1952, Fortner Engineering is a family-owned company with 45 workers. My company specializes in the repair and overhaul of hydraulic aircraft components. Our customers include foreign and domestic airlines, parts distributors, and other repair stations. Fortner Engineering holds a Federal Aviation Administration (FAA) part 145 repair station certificate and is a European Aviation Safety Agency (EASA) part 145 approval holder.

I am testifying in my capacity as senior vice president of the Aeronautical Repair Station Association (ARSA). ARSA is the premier association for the international maintenance industry with 450 members worldwide; it also represents certificated aviation design, production, and maintenance facilities before Congress, the FAA and other national aviation authorities (NAAs).

ARSA’s primary members are companies holding repair station certificates issued by the FAA under part 145 of the Federal Aviation Regulations (FARs). These certificates are our industry’s “license to do business.” They authorize repair stations to perform maintenance and alterations on civil aviation articles, including aircraft, engines, and propellers; the certificates also permit maintenance on the components installed on these products. Certificated repair stations perform maintenance for airlines, the military, and general aviation owners and operators.

My testimony will touch on several key themes:

- The aviation maintenance industry has a substantial, positive economic impact on the U.S. economy;
- Industry – not government – is ultimately responsible for the safety and security of airline travelers; ARSA’s members are proudly living up to that challenge and contributing to the safest period in the history of civil aviation;

- Foreign repair stations are an essential element of the global aviation system and help ensure the safety of travelers worldwide;
- Policymakers and regulators must refrain from micromanaging our industry and allow repair stations to operate free from unnecessary government interference;
- Inconsistent interpretation of regulations is hindering job creation and wreaking havoc on repair stations; and,
- The FAA Modernization & Reform Act strikes the right balance between the need for government oversight and operational freedom.

Repair stations are an integral part of the U.S. economy

The repair station industry is a vibrant part of the U.S. and world economy. A recent study by AeroStrategy for ARSA determined that spending in the global maintenance, repair, and overhaul (MRO) market exceeded \$50 billion in 2008, with North America (the U.S. and Canada) accounting for \$19.4 billion of the total. When induced and related economic effects are considered, the industry's impact on the U.S. economy is \$39.1 billion per year. The more than 4,000 repair stations in the United States - 85 percent of which are small and medium-size companies like Fortner Engineering - collectively employ more than 274,000 individuals.¹

The United States also has a strong and favorable balance of trade in the aviation maintenance market. The association's study determined that North America is a major net exporter of aviation maintenance services, enjoying a \$2.4 billion positive balance of trade in this arena. While North America is a slight net importer of heavy airframe maintenance services, it has \$1.4 billion and \$1.2 billion trade surpluses in the engine and component maintenance services markets, respectively. The U.S. competitive advantage in these two areas has important economic benefits because one dollar of spending on airframe heavy maintenance generates just \$1.38 in additional monetary activity, while a dollar spent on engine and component maintenance services generates \$1.85 and \$1.67, respectively.

The contract maintenance industry is a source of stable, good paying jobs for skilled American workers. Unlike many sectors, repair stations are rapidly growing. According to ARSA's 2012 member survey, there is optimism about economic prospects in the coming year; 65 percent of respondents expect business and markets to grow. This economic growth will translate into job creation; more than 60 percent of respondents plan to add workers and positions in 2012.

¹ For details, see the "Aviation Maintenance Industry Employment and Economic Impact" table, found on ARSA's website at the following link: <http://www.arsa.org/files/ARSA-StatebyStateOnePager-20100505.pdf>.

Repair stations specialize in safety

To operate in the civil aviation maintenance industry, certificated repair stations must demonstrate to the FAA, or other NAAs, that they possess the housing, facilities, equipment, personnel, technical data, and quality control systems necessary to perform maintenance in an airworthy manner. Based upon satisfactory showings in these areas, a repair station is then rated to perform certain types of maintenance.

Not all repair stations look alike and their capabilities vary significantly. Some provide line maintenance – the routine, day-to-day work necessary to keep an airline’s fleet operating safely. Some perform substantial maintenance, which includes more comprehensive inspection and repairs on airframes and overhauls of aircraft engines that can take months to complete. Other repair stations offer specialized services such as welding, heat treating, painting, and coating on a variety of aircraft parts. However, the vast majority of repair stations perform maintenance on component parts. Component maintenance occurs off the aircraft, typically away from an airport in industrial parks and similar facilities.

The skills and technology required to maintain civil aviation products call for an increased level of sophistication. To meet this demand, contract maintenance companies have developed highly-specialized facilities. Repair stations, like medical specialists, often seek to strengthen their core competencies by specializing in a particular line or type of product. This allows them to develop a high level of proficiency in certain processes or repairs.

Good safety is good business

The increased use of contract maintenance by airlines has coincided with the safest period in the history of America’s commercial aviation industry.

The basic nature of the aviation industry demands that safety and security be the top priorities for our member companies. Operators and airlines will not do business with companies that put their passengers and valuable business assets (i.e., aircraft) at risk. Put simply, for ARSA members, good safety is good business.

Aviation safety does not begin and end with the FAA or any other regulatory body. Safety is the responsibility of every aviation maintenance employee performing work on behalf of an owner or operator, a certificated repair station, air carrier or other aviation business. Government inspectors will never be able to oversee each mechanic at every facility all the time. The industry has the ultimate obligation, responsibility, and authority to ensure that the civil aviation system is safe and repair stations are fulfilling that responsibility despite the FAA’s limited oversight resources.

Given the federal government's budget challenges, it is inevitable that the FAA will continue to be under-resourced as the industry grows. That makes it even more imperative that Congress and regulators alike realize that safety depends not on legislation or regulation, but on the culture of safety within individual companies and an effective partnership between government and industry.

Foreign repair stations are an integral part of the aviation safety system

Foreign repair stations - entities outside the United States that are authorized to perform work on U.S.-registered aircraft – are integral to international aviation and are subject to the same safety standards as domestic part 145 certificate holders.

The International Convention on Civil Aviation (i.e., the Chicago Convention) of 1944 and ICAO standards require that the State of Registry (i.e., the country in which an aircraft is registered) oversee the maintenance performed on that aircraft and related components, regardless of where the work is performed. Consequently, maintenance on a U.S.-registered aircraft must be performed by an FAA-certificated maintenance provider. Similarly, when an aircraft of foreign registry requires maintenance (e.g., while in the United States), only a repair station certificated or validated by the aircraft's civil aviation authority (CAA) of registry may perform the work. For example, only a European Aviation Safety Agency (EASA) certificated repair station may perform maintenance on an aircraft of French registry.

Foreign repair stations must meet the same or equivalent safety standards as domestic facilities. The FAA Modernization & Reform Act ensures that foreign repair stations be inspected annually by FAA safety inspectors in a manner consistent with our bilateral aviation safety agreements (BASAs). It also ensures the FAA can carry out additional inspections based on identified risk. This allows the FAA to reserve scarce resources for repair stations that pose the most risk and prevents the agency from performing duplicative inspections in areas where there are BASAs in place.

To restate a point made earlier in the testimony, the U.S. is a major beneficiary of the international trade in aviation maintenance. The rest of the world buys \$2.4 billion more each year in maintenance services than we buy from abroad. As far as other countries are concerned, U.S. repair stations are "foreign" repair stations. My company has an EASA approval that allows us to perform work for EU registered aircraft. Consequently, Fortner Engineering had to ensure compliance not only with the civil aviation authority in this country, but the additional and different requirements of EASA.

Any effort to limit the ability of U.S. air carriers to use foreign repair stations will inevitably lead to retaliation from foreign governments that will hurt the hundreds of U.S. companies, like mine, that serve an international clientele.

Congressional micromanagement wreaks havoc on the industry

Unfortunately, there has been a push by many in Congress and the administration to micromanage the aviation maintenance industry. These efforts are not without consequence. In fact, according to ARSA's 2012 member survey, the biggest long-term threat to the aviation maintenance industry is over-regulation and government intrusion.

One recent – though unfortunately not isolated - example of Congress attempting to micromanage the aviation maintenance industry is the mandate that the Transportation Security Administration (TSA) issue repair station security rules.

VISION-100, an FAA reauthorization law enacted in 2003, required TSA to issue security rules for all aviation repair stations by August 2004. When TSA failed to meet that deadline, lawmakers (in the 9/11 Recommendation Implementation Act) demanded the security regulations be completed by August 2008. The penalty for the TSA's failure to comply: Congress prohibited the FAA from issuing new foreign repair station certifications.

Nearly four years later, the TSA has failed to issue final repair station security regulations and the FAA is banned from issuing new foreign repair station certificates. In 2011, ARSA completed an informal survey of aerospace companies to assess the effect that TSA's inaction and the ensuing foreign repair station certification prohibition is having on the industry. The results demonstrated the detrimental impact on industry:

- **The ban is hurting small to medium-sized businesses.** Half (50 percent) of respondent companies employ fewer than 500 workers. Of these, an overwhelming majority (83 percent) are seeking to open new foreign repair stations.
- **Companies want to tap into rapidly expanding international aviation markets.** Three quarters of respondents (75 percent) indicated their company has an application for FAA foreign repair station certification pending or will submit an application when the moratorium is removed.
- **U.S. companies are losing revenue.** U.S.-based companies responding to the survey report they are losing more than \$18 million in combined revenues annually because of the FAA's inability to certificate new foreign repair stations.
- **The ban is stifling job growth.** Over half of respondents (55 percent) said their companies would hire new U.S.-based employees if they could obtain FAA foreign repair station certification. Two companies anticipated hiring more than 100 new U.S.-based employees.

The results of ARSA's informal survey are clear: TSA's failure to finalize repair station security rules is preventing U.S. aviation companies from tapping into rapidly expanding overseas markets, hindering domestic job creation and growth. Further, ARSA believes that it is only a matter of time before foreign countries impose a reciprocal ban that prevents repair stations located in the United States from gaining approval from foreign CAAs.

Given TSA's lack of progress toward finalizing repair station security rules, Congress must stop penalizing the aerospace industry and again allow the FAA to certificate new foreign repair stations. Prohibiting one federal agency (FAA) from doing its job because another (TSA) is ignoring congressional mandates is bad policy and does not work. TSA has committed to completing the security rules during the fourth quarter of this year; if the agency does not meet its self-imposed deadline, Congress must take action and permit the FAA to do its job and once again certificate new foreign repair stations.

Inconsistent interpretation of regulations is hindering growth

Lack of standardization across FAA regional offices (even within a single office) can significantly impact repair stations across the country.

A situation at Fortner Engineering demonstrates how overzealous regulators and inconsistent application of regulations impose impediments on repair stations with no benefit to flight safety. My company built its business around the repair of a component called a "lap assembly," which is at the heart of most hydraulic valves. Due to their design, lap assemblies are a difficult part to manufacture and are typically very expensive.

In 1969, Fortner developed proprietary procedures to repair lap assemblies in a less costly manner without compromising safety. We fixed thousands of these components for over a decade with the full knowledge of our local FAA inspector based in the Western-Pacific region. In 1979, an FAA inspector from a completely different region (the Northwest Mountain region) determined that the repair was "unapproved." The FAA proceeded to impose an emergency suspension of my company's part 145 repair station certificate. While the FAA reinstated our part 145 certificate shortly thereafter, the matter wasn't resolved for almost two more years.

Unfortunately, these types of arbitrary agency actions have no benefit to flight safety, but they do have real world consequences. During the time my company was battling with the FAA, we had to divert substantial resources to retain our part 145 certificate and our ability to perform the lap assembly repair we developed. The company lost significant revenues and we were forced to cut our workforce by two-thirds; all because of the capricious determination of one FAA inspector.

While my company's situation occurred years ago, ARSA members are routinely plagued by FAA's inconsistent application of regulations. ARSA members frequently cite inconsistent interpretation and enforcement as a major problem and the lack of regulatory standardization across regions particularly impairs small businesses.

ARSA commends Congress for mandating in the FAA Modernization & Reform Act that the FAA convene an advisory panel to determine the root causes of inconsistent regulatory interpretation by the FAA Flight Standards Service and Aircraft Certification Service and develop recommendations to improve the consistency of regulatory interpretation. Repair stations look forward to having a voice on this new advisory panel and urge Congress to do everything in its power to find a solution to this problem.

The FAA Modernization & Reform Act

ARSA congratulates Congress for recently completing long-overdue FAA reauthorization legislation. The FAA Modernization & Reform Act strikes the right balance between oversight and safety and will allow the aviation maintenance industry continued prosperity (see Appendix A for ARSA's full analysis of the maintenance provisions of the law).

The law is a major improvement over past legislative proposals. Last Congress, repair stations faced FAA reauthorization legislation that would have required duplicative biannual inspections of all repair stations. It also would have mandated drug and alcohol testing for overseas maintenance facilities without regard to laws of other nations, effectively forcing repair stations in countries that prohibit random testing to surrender their certificates. Having no foreign repair stations in a country would inhibit travel by American citizens on U.S.-registered aircraft.

The earlier versions of the bill would have added layers of bureaucratic oversight and increased costs for repair stations and airlines with no improvement to safety. Most significantly, they would have destroyed the system of BASAs that allow U.S. aviation maintenance companies to compete internationally and threatened the United States' \$2.4 billion positive balance of trade in maintenance services.

A recent ARSA commissioned study quantified the economic benefits of BASAs. The research determined that maintenance bilaterals significantly reduce certification costs for repair stations. In fact, it costs repair stations significantly more (almost three times as much) to become certificated by "foreign" CAA's when the home country does not have a BASA. Additionally, the study found maintenance bilaterals help make repair

stations more profitable and that the collapse of the U.S.-EU BASA would disproportionately hurt small companies.²

For example, my small company would have been required to pay as much as \$37,000 to obtain EASA certification and an annual renewal fee of \$33,000 if the E.U.-U.S. BASA collapsed. Currently, we pay about \$1,150 per year. Bilaterals clearly are a huge benefit to U.S. repair stations.

Conclusion

Repair stations have long been, and continue to be, a vital part of the aviation industry and our nation's economy. It is no coincidence that the increased use of contract maintenance has coincided with the safest period in commercial aviation history. In the end, no government agency can guarantee aviation safety. Safety is the business of aviation companies and their employees. ARSA looks forward to working with Congress to ensure that legislation and regulations are based on our common goal: safety with economic viability.

² For the complete study see "Bilateral Aviation Safety Agreements: Reducing Costs for the Aviation Industry", found on ARSA's website at the following link: <http://www.arsa.org/files/ARSA-BASAs-ReducingCostsForTheAviationIndustry.pdf>

Appendix A
Analysis of the Maintenance Provisions of the Final FAA Modernization & Reform Act

On February 14, 2012, President Obama signed a new, four-year FAA authorization law. This analysis of the key provisions of the FAA Modernization & Reform Act affecting maintenance providers was prepared by the Aeronautical Repair Station Association.

Final FAA Modernization & Reform Act		
Provision	Exact Language	ARSA Analysis
Sec. 308. Inspection of Repair Stations Located Outside the United States	<p>(a) IN GENERAL.—Not later than 1 year after the date of enactment of this section, the Administrator of the Federal Aviation Administration shall establish and implement a safety assessment system for all part 145 repair stations based on the type, scope, and complexity of work being performed. The system shall—</p> <p>(1) ensure that repair stations located outside the United States are subject to appropriate inspections based on identified risks and consistent with existing United States requirements;</p> <p>(2) consider inspection results and findings submitted by foreign civil aviation authorities operating under a maintenance safety or maintenance implementation agreement with the United States; and</p> <p>(3) require all maintenance safety or maintenance implementation agreements to provide an opportunity for the Administration to conduct independent inspections of covered part 145 repair stations when safety concerns warrant such inspections.</p>	<p>Within a year, the FAA is required to create a safety assessment system for part 145 repair stations, an initiative the FAA and ARSA have been working on for some time.</p> <p>The FAA has been working to adapt its “ATOS” to repair stations, which should result in a “safety” assessment.</p> <p>ARSA is helping the agency develop a “repair station preparedness” assessment for new repair stations that can be used to enhance the continued oversight of repair stations based upon original readiness, types of ratings, work and size.</p>

Final FAA Modernization & Reform Act		
Provision	Exact Language	ARSA Analysis
	(b) NOTICE TO CONGRESS OF NEGOTIATIONS.—The Administrator shall notify the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Transportation and Infrastructure of the House of Representatives not later than 30 days after initiating formal negotiations with foreign aviation authorities or other appropriate foreign government agencies on a new maintenance safety or maintenance implementation agreement.	The law requires the FAA to notify congressional authorizing committees after commencing negotiations on new maintenance safety or implementation agreements.
	(c) ANNUAL REPORT.—The Administrator shall publish an annual report on the Administration’s oversight of part 145 repair stations and implementation of the safety assessment system required under subsection (a). The report shall— (1) describe in detail any improvements in the Administration’s ability to identify and track where part 121 air carrier repair work is performed; (2) include a staffing model to determine the best placement of inspectors and the number of inspectors needed; (3) describe the training provided to inspectors; and (4) include an assessment of the quality of monitoring and surveillance by the Administration of work performed by its inspectors and the inspectors of foreign authorities operating under a maintenance safety or maintenance implementation agreement.	The FAA is required to submit a report on the progress and certain aspects of the safety assessment system.

Final FAA Modernization & Reform Act		
Provision	Exact Language	ARSA Analysis
	(d) ALCOHOL AND CONTROLLED SUBSTANCES TESTING PROGRAM REQUIREMENTS.— (1) IN GENERAL.—The Secretary of State and the Secretary of Transportation, acting jointly, shall request the governments of foreign countries that are members of the International Civil Aviation Organization to establish international standards for alcohol and controlled substances testing of persons that perform safety-sensitive maintenance functions on commercial air carrier aircraft.	The International Civil Aviation Organization (ICAO) currently recommends drug and alcohol testing of safety-sensitive employees, but does not require testing. ARSA supports working through ICAO for any broad changes to the aviation industry.

Final FAA Modernization & Reform Act		
Provision	Exact Language	ARSA Analysis
	<p>(2) APPLICATION TO PART 121 AIRCRAFT WORK.—Not later than 1 year after the date of enactment of this section, the Administrator shall promulgate a proposed rule requiring that all part 145 repair station employees responsible for safety-sensitive maintenance functions on part 121 air carrier aircraft are subject to an alcohol and controlled substances testing program determined acceptable by the Administrator and consistent with the applicable laws of the country in which the repair station is located.</p>	<p>This section contains ARSA supported and suggested language that respects national sovereignty and BASAs.</p> <p>The FAA is to issue a proposed rule requiring all part 145 repair station employees responsible for safety-sensitive functions on part 121 air carrier aircraft be subject to a drug and alcohol program acceptable to the Administrator and consistent with the laws of the repair station's country.</p> <p>Importantly, the law does not require that individuals be subject to the DOT drug and alcohol testing program, a requirement from prior FAA reauthorization proposals. In addition, the provision respects the applicable laws of the country in which a repair station is located when determining if the facility's drug and alcohol testing program is acceptable, a top ARSA priority.</p>

Final FAA Modernization & Reform Act		
Provision	Exact Language	ARSA Analysis
	(e) ANNUAL INSPECTIONS.—The Administrator shall ensure that part 145 repair stations located outside the United States are inspected annually by Federal Aviation Administration safety inspectors, without regard to where the station is located, in a manner consistent with United States obligations under international agreements. The Administrator may carry out inspections in addition to the annual inspection required under this subsection based on identified risks.	<p>The law codifies current FAA policy requiring that foreign repair stations be inspected annually by FAA safety inspectors in a manner consistent with BASAs. It also ensures the FAA can carry out additional inspections based on identified risk. The FAA need not perform duplicative inspections in areas where there are BASAs in place.</p> <p>This provision is a significant improvement over past reauthorization proposals that would have required biannual inspections of <u>all</u> repair stations, regardless of international agreements.</p>
Sec. 319. Maintenance Providers	(a) REGULATIONS.—Not later than 3 years after the date of enactment of this Act, the Administrator of the Federal Aviation Administration shall issue regulations requiring that covered work on an aircraft used to provide air transportation under part 121 of title 14, Code of Federal Regulations, be performed by persons in accordance with subsection (b).	Within three years, the FAA is to issue regulations limiting who can perform certain maintenance on a part 121 aircraft.

Final FAA Modernization & Reform Act		
Provision	Exact Language	ARSA Analysis
	<p>(b) PERSONS AUTHORIZED TO PERFORM CERTAIN WORK.—A person may perform covered work on aircraft used to provide air transportation under part 121 of title 14, Code of Federal Regulations, only if the person is employed by—</p> <ol style="list-style-type: none"> (1) a part 121 air carrier; (2) a part 145 repair station or a person authorized under section 43.17 of title 14, Code of Federal Regulations (or any successor regulation); or (3) subject to subsection (c), a person that— <ol style="list-style-type: none"> (A) provides contract maintenance workers, services, or maintenance functions to a part 121 air carrier or part 145 repair station; and (B) meets the requirements of the part 121 air carrier or the part 145 repair station, as appropriate. 	<p>The law prohibits contracting covered work to a person certificated under part 65 <u>unless</u> that person is employed by an air carrier, repair station or a company contractor. The law takes into account the BASA with Canada.</p>
	<p>(c) TERMS AND CONDITIONS.—Covered work performed by a person who is employed by a person described in subsection (b)(3) shall be subject to the following terms and conditions:</p> <ol style="list-style-type: none"> (1) The applicable part 121 air carrier shall be directly in charge of the covered work being performed. (2) The covered work shall be carried out in accordance with the part 121 air carrier’s maintenance manual. (3) The person shall carry out the covered work under the supervision and control of the part 121 air carrier directly in charge of the covered work being performed on its aircraft. 	<p>When it comes to part 65 certificated workers, Congress mixed up the phrases “<u>directly in charge</u>” and working “<u>under the supervision and control</u>” of the air carrier.</p> <p>Therefore, ARSA believes the FAA will take the position that the current air carrier control and oversight will meet the requirements of this law.</p>

Final FAA Modernization & Reform Act		
Provision	Exact Language	ARSA Analysis
	<p>DEFINITIONS.—In this section, the following definitions apply:</p> <p>(1) COVERED WORK.—The term “covered work” means any of the following:</p> <p>(A) Essential maintenance that could result in a failure, malfunction, or defect endangering the safe operation of an aircraft if not performed properly or if improper parts or materials are used.</p> <p>(B) Regularly scheduled maintenance.</p> <p>(C) A required inspection item (as defined by the Administrator).</p> <p>(2) PART 121 AIR CARRIER.—The term “part 121 air carrier” means an air carrier that holds a certificate issued under part 121 of title 14, Code of Federal Regulations.</p> <p>(3) PART 145 REPAIR STATION.—The term “part 145 repair station” means a repair station that holds a certificate issued under part 145 of title 14, Code of Federal Regulations.</p>	<p>The terms “essential maintenance” and “required inspection item” has already been defined by the FAA in anticipation of this legal requirement.</p> <p>ARSA anticipates that the term “regularly scheduled maintenance” will become “heavy maintenance” rather than line checks and other daily or flight required inspections.</p>