



U.S. Department  
of Transportation

**Federal Aviation  
Administration**

Office of the Administrator

800 Independence Ave., S.W.  
Washington, D.C. 20591

October 28, 2013

The Honorable Barbara Mikulski  
Chairwoman, Committee on Appropriations  
United States Senate  
Washington, DC 20510

Dear Madam Chairwoman:

As requested in the Consolidated and Further Continuing Appropriations Act, 2012, (Public Law 112-55, 125 stat. 646), and the FAA Modernization and Reform Act of 2012 (Public Law 112-95, Section 606(b)), the Federal Aviation Administration (FAA) is pleased to provide the annual Aviation Safety Workforce Plan that: provides a background for current staffing levels; describes the evolving aviation safety environment; forecasts expected attrition and specific hiring targets over a 10-year period; and details strategies for meeting staffing needs through better management practices.

An interim update to the FAA's Aviation Safety Workforce Plan was provided to Congress March 29, 2013. A more detailed plan is enclosed.

We have sent identical letters to Chairmen Rockefeller, Rogers, and Shuster; Senators Shelby and Thune; Congresswoman Lowey; and Congressman Rahall.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael P. Huerta", with a large circular flourish at the end.

Michael P. Huerta  
Administrator

Enclosure



U.S. Department  
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**Federal Aviation  
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Office of the Administrator

800 Independence Ave., S.W.  
Washington, D.C. 20591

October 28, 2013

The Honorable Richard Shelby  
Committee on Appropriations  
United States Senate  
Washington, DC 20510

Dear Senator Shelby:

As requested in the Consolidated and Further Continuing Appropriations Act, 2012, (Public Law 112-55, 125 stat. 646), and the FAA Modernization and Reform Act of 2012 (Public Law 112-95, Section 606(b)), the Federal Aviation Administration (FAA) is pleased to provide the annual Aviation Safety Workforce Plan that: provides a background for current staffing levels; describes the evolving aviation safety environment; forecasts expected attrition and specific hiring targets over a 10-year period; and details strategies for meeting staffing needs through better management practices.

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October 28, 2013

The Honorable Harold Rogers  
Chairman, Committee on Appropriations  
House of Representatives  
Washington, DC 20515

Dear Mr. Chairman:

As requested in the Consolidated and Further Continuing Appropriations Act, 2012, (Public Law 112-55, 125 stat. 646), and the FAA Modernization and Reform Act of 2012 (Public Law 112-95, Section 606(b)), the Federal Aviation Administration (FAA) is pleased to provide the annual Aviation Safety Workforce Plan that: provides a background for current staffing levels; describes the evolving aviation safety environment; forecasts expected attrition and specific hiring targets over a 10-year period; and details strategies for meeting staffing needs through better management practices.

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We have sent identical letters to Chairmen Rockefeller and Shuster; Chairwoman Mikulski; Senators Shelby and Thune; Congresswoman Lowey; and Congressman Rahall.

Sincerely,

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Michael P. Huerta  
Administrator

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800 Independence Ave., S.W.  
Washington, D.C. 20591

October 28, 2013

The Honorable Nita Lowey  
Committee on Appropriations  
House of Representatives  
Washington, DC 20515

Dear Congresswoman Lowey:

As requested in the Consolidated and Further Continuing Appropriations Act, 2012, (Public Law 112-55, 125 stat. 646), and the FAA Modernization and Reform Act of 2012 (Public Law 112-95, Section 606(b)), the Federal Aviation Administration (FAA) is pleased to provide the annual Aviation Safety Workforce Plan that: provides a background for current staffing levels; describes the evolving aviation safety environment; forecasts expected attrition and specific hiring targets over a 10-year period; and details strategies for meeting staffing needs through better management practices.

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Michael P. Huerta  
Administrator

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800 Independence Ave., S.W.  
Washington, D.C. 20591

October 28, 2013

The Honorable John D. Rockefeller, IV  
Chairman, Committee on Commerce, Science,  
and Transportation  
United States Senate  
Washington, DC 20510

Dear Mr. Chairman:

As requested in the Consolidated and Further Continuing Appropriations Act, 2012, (Public Law 112-55, 125 stat. 646), and the FAA Modernization and Reform Act of 2012 (Public Law 112-95, Section 606(b)), the Federal Aviation Administration (FAA) is pleased to provide the annual Aviation Safety Workforce Plan that: provides a background for current staffing levels; describes the evolving aviation safety environment; forecasts expected attrition and specific hiring targets over a 10-year period; and details strategies for meeting staffing needs through better management practices.

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We have sent identical letters to Chairmen Rogers and Shuster; Chairwoman Mikulski; Senators Shelby and Thune; Congresswoman Lowey; and Congressman Rahall.

Sincerely,

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Michael P. Huerta  
Administrator

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Office of the Administrator

800 Independence Ave., S.W.  
Washington, D.C. 20591

October 28, 2013

The Honorable John Thune  
Committee on Commerce, Science,  
and Transportation  
United States Senate  
Washington, DC 20510

Dear Senator Thune:

As requested in the Consolidated and Further Continuing Appropriations Act, 2012, (Public Law 112-55, 125 stat. 646), and the FAA Modernization and Reform Act of 2012 (Public Law 112-95, Section 606(b)), the Federal Aviation Administration (FAA) is pleased to provide the annual Aviation Safety Workforce Plan that: provides a background for current staffing levels; describes the evolving aviation safety environment; forecasts expected attrition and specific hiring targets over a 10-year period; and details strategies for meeting staffing needs through better management practices.

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800 Independence Ave., S.W.  
Washington, D.C. 20591

October 28, 2013

The Honorable Bill Shuster  
Chairman, Committee on Transportation  
and Infrastructure  
House of Representatives  
Washington, DC 20515

Dear Mr. Chairman:

As requested in the Consolidated and Further Continuing Appropriations Act, 2012, (Public Law 112-55, 125 stat. 646), and the FAA Modernization and Reform Act of 2012 (Public Law 112-95, Section 606(b)), the Federal Aviation Administration (FAA) is pleased to provide the annual Aviation Safety Workforce Plan that: provides a background for current staffing levels; describes the evolving aviation safety environment; forecasts expected attrition and specific hiring targets over a 10-year period; and details strategies for meeting staffing needs through better management practices.

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Michael P. Huerta  
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800 Independence Ave., S.W.  
Washington, D.C. 20591

October 28, 2013

The Honorable Nick J. Rahall, II  
Committee on Transportation and Infrastructure  
House of Representatives  
Washington, DC 20515

Dear Congressman Rahall:

As requested in the Consolidated and Further Continuing Appropriations Act, 2012, (Public Law 112-55, 125 stat. 646), and the FAA Modernization and Reform Act of 2012 (Public Law 112-95, Section 606(b)), the Federal Aviation Administration (FAA) is pleased to provide the annual Aviation Safety Workforce Plan that: provides a background for current staffing levels; describes the evolving aviation safety environment; forecasts expected attrition and specific hiring targets over a 10-year period; and details strategies for meeting staffing needs through better management practices.

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Federal Aviation  
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# Aviation Safety

## 2013 WORKFORCE PLAN

**SAFETY** is our passion

**EXCELLENCE** is our promise

**INTEGRITY** is our touchstone

**PEOPLE** are our strength

**INNOVATION** is our signature

This is the FAA's sixth annual update to the Aviation Safety (AVS) Workforce Plan. The FAA issued the first comprehensive AVS workforce plan in March 2008. It provides staffing ranges for all of the FAA's AVS Services and Offices as well as actual onboard levels as of September 22, 2012. This 2013 report incorporates changes in aircraft fleet forecasts, inspector and engineer retirements and other factors, but does not include the potential effect of any sequestration events that could impact the plan.

To meet the requirements in the Consolidated and Further Continuing Appropriations Act, 2012 (Public Law 112-55, 125 stat. 646) and the FAA Modernization and Reform Act of 2012 (Public Law 112-95, Section 606(b)), the FAA has prepared an annual Aviation Safety Workforce Plan that:

- Provides the background for current staffing levels;
- Describes the evolving aviation safety environment;
- Provides an aviation safety inspector staffing forecast based on model results;
- Forecasts expected attrition and specific hiring targets over a 10-year period; and
- Details strategies for meeting staffing needs through better management practices.

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## **Executive Summary**

The Federal Aviation Administration's (FAA) mission is to provide the safest, most efficient aerospace system in the world. In support of this mission, the FAA's Aviation Safety (AVS) line of business is responsible for ensuring the safety of civil aviation. Through a dedicated workforce of safety critical and operational support professionals located in offices around the country and abroad, AVS sets, oversees, and enforces safety standards for any person or product that operates in the National Airspace System (NAS), including airmen, airlines, manufacturers, repair stations, mechanics, and air traffic controllers.

### **Workload**

Industry business changes, technological advances, and the need for greater global harmonization have required the FAA to continue to work toward transforming the NAS through the implementation of Next Generation Air Transportation System (NextGen) technologies and a Safety Management Systems (SMS) approach. To stay aligned with these changes, AVS continues to forecast and manage changing workload demands.

The requirement for AVS services is driven by industry characteristics, such as number of aircraft, types of aircraft (fixed-wing, helicopter, turbine engine, reciprocating engine), scheduled and on-demand operations, domestic and foreign operations, number of company employees, experience of employees, and location of operations and manufacturing facilities. The number of operators and operations play a part in forecasting demand for AVS services, but operator configuration/complexity is the primary demand driver for the Flight Standards Service, while aircraft design and manufacturing are the primary drivers for the Aircraft Certification Service. There are seven services/offices within AVS as shown in Appendix 1. The largest two services are Flight Standards and Aircraft Certification.

The aviation industry continually adapts to economic conditions. Operators, manufacturers and suppliers change their business practices to gain competitive advantages by adjusting variables such as fleet size, fleet mix, maintenance/production location, manufacturing/certification tools/techniques and operating stations. The AVS organization must be dynamic in addressing industry changes by providing out-year staffing projections in order to meet oversight and certification demands for service.

### **Staffing**

AVS continues to recruit, hire, and retain highly-qualified safety professionals who have the necessary technical and analytical skills to meet the safety mission. AVS ended Fiscal Year (FY) 2012 with a staffing level of 7,440 personnel. In FY 2013 the enacted staffing level for AVS is 7,455, although this does not include the effects of sequestration. In the 2014 Budget, AVS plans to transfer 217 positions to the Assistant Administrator for Finance and Management (AFN), Office of the Chief Information Officer (CIO) and will have an end of year estimated staffing level of 7,238.

### **Attrition**

AVS lost 527 employees through attrition in FY 2012 and hired 500 safety professionals. In FY 2012 the AVS attrition rate was 7 percent. AVS continues to forecast attrition levels between 7 and 7.4 percent in the out-years based on forecasted increases in employee retirement eligibility and the improving national economy. AVS plans to continue to hire behind future attrition.

### **Hiring and Training**

AVS will hire safety professionals and continue its focus on providing the training opportunities for them to remain qualified on and maximize the workforce's diverse skill sets to meet the safety mission. By leveraging a combination of innovative mobile learning and traditional classroom-style instruction, AVS is preparing its workforce to meet demands in a dynamic aviation environment.

**Succession Planning**

Since over 42 percent of its workforce is eligible to retire within the next 5 years, AVS continues to focus on building and maintaining a pipeline of skilled employees who are prepared for and capable of taking on roles of increasing responsibility within the organization.

## Introduction

### AVS Safety Continuum

AVS promotes the safety of the world's largest, most complex aviation system by regulating and providing oversight of the civil aviation industry. The AVS workforce is responsible for:

- Setting Standards;
- Certification; and
- Continued Operational Safety.

**Figure 1: AVS Safety Continuum**

#### Setting Standards

AVS creates and amends the rules, regulations, policies, and associated guidance material that apply to people, organizations, and equipment operating in America's civil aviation system. AVS also develops aviation safety and certification standards and policies in collaboration with the aviation industry, other government agencies, and FAA experts.

#### Certification

AVS determines compliance with certification standards and issues certificates based on these standards. AVS issues both initial certificates and renewals to airmen, airlines, civil aeronautical products, aircraft repair stations, and repairmen. AVS also issues airworthiness approvals for complete individual aircraft, aircraft parts, systems, hardware and software, and all types of aircraft.

#### Continued Operational Safety

Through safety surveillance and oversight programs, audits, evaluations, education and training, research, and accident/incident investigations, AVS ensures existing certificate holders continue to meet the safety requirements, standards, and regulations of their original certification.

### Aviation Safety Services and Offices

As detailed in Appendices 1 and 2, AVS assures safety through a workforce that is located domestically and abroad (Appendices 3, 4 and 5) and divided into seven Services and Offices (S/Os):

- Flight Standards Service (AFS);
- Aircraft Certification Service (AIR);
- Office of Aerospace Medicine (AAM);
- Air Traffic Safety Oversight Service (AOV);
- Office of Accident Investigation and Prevention (AVP);
- Office of Rulemaking (ARM); and
- Office of Quality, Integration, and Executive Services (AQS).



## Aviation Safety: An Evolving Environment

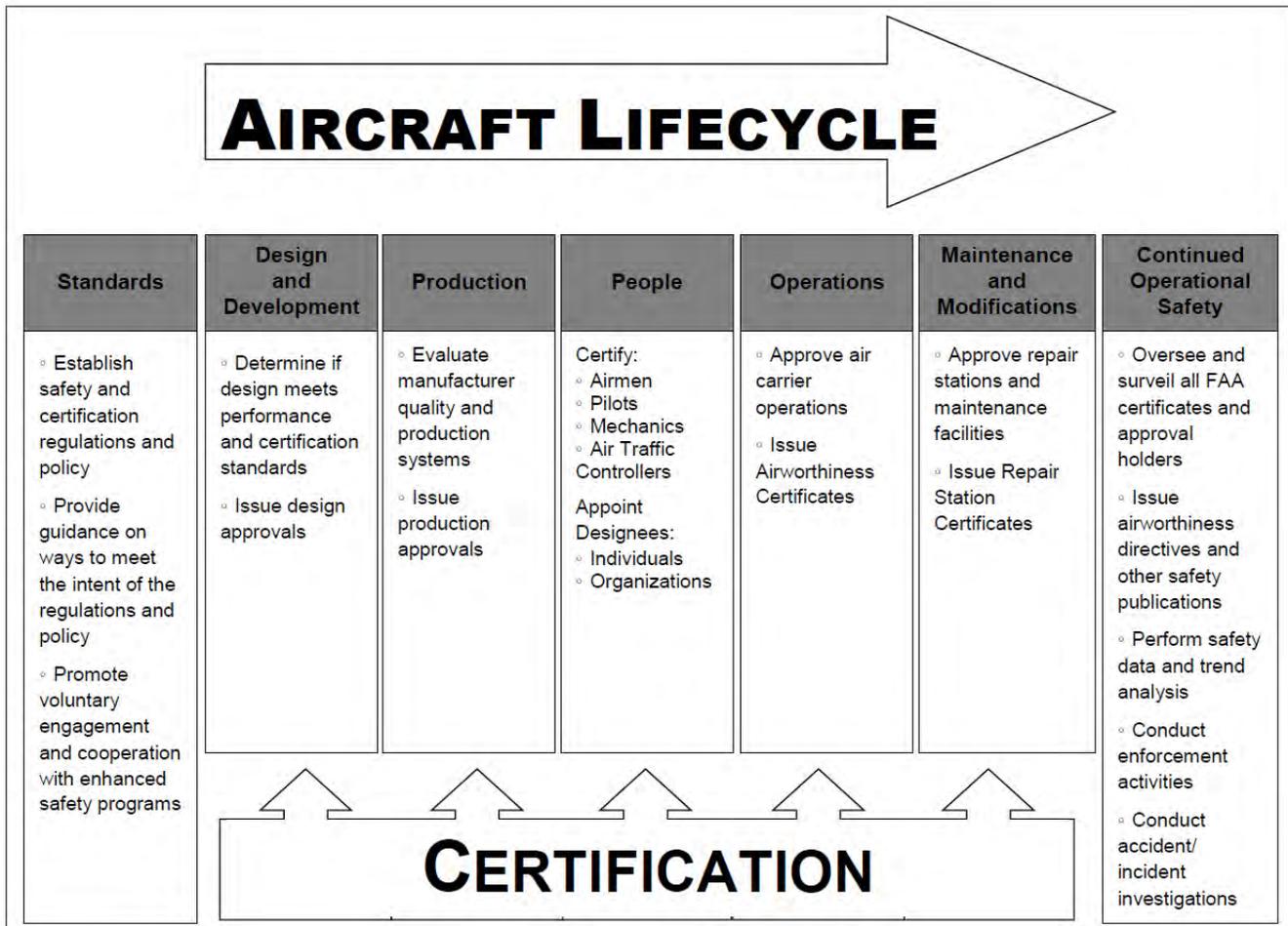
To safely manage new certification requests; changes in aviation business processes or business models; global and domestic maintenance and supplier outsourcing; and advances in aviation technologies, science, and medicine, AVS will have to provide increased oversight.

To accommodate new aircraft and aircraft systems entering the NAS, AVS will have to develop new regulations, standards, policy, and guidance. AVS will also certify new NextGen technology while providing additional resources to support the implementation of SMS.

AVS is meeting these constantly shifting and increasing demands by requesting necessary resources and ensuring personnel are fully equipped, trained, and capable of achieving every aspect of the organization’s safety mission.

As shown in Figure 2, the AVS safety continuum encompasses every aspect of the aircraft lifecycle, ensuring that every stakeholder (Appendix 6) certified to operate in the NAS continues to meet safety standards.

Figure 2: Aircraft Lifecycle



## Staffing Requirements

AVS has three major staffing categories of employees, safety critical operational staff, safety technical specialist staff, and operational support staff. AVS published workforce definitions in FY 2007 that identify positions within three staffing categories. The entire AVS workforce is included within these three staffing categories.

**Safety Critical Operational Staff** –Positions that have a direct operational impact on the AVS safety mission, including AVS personnel who:

- Monitor and enforce industry compliance with safety regulations, through inspections, data analysis, risk management, or other means;
- Monitor and enforce Air Traffic Organization (ATO) compliance with safety regulations;
- Monitor and enforce industry drug and alcohol testing programs;
- Investigate accidents;
- Certify aircraft, aircraft alterations, equipment, and avionics; and
- Certify aviation personnel, airlines, repair stations, training centers, and other air agencies.

Aviation Safety Inspectors (ASIs) and Aerospace Engineers (ASEs) make up the major position types within the Safety Critical Operational Staffing Category. Within AFS, the inspector workforce is assigned primarily to Certificate Management Offices (CMOs), Flight Standards District Offices (FSDOs), International Field Offices (IFOs), and Aircraft Evaluation Group Offices (AEGs). In AIR, inspectors are generally assigned to Manufacturing Inspection District Offices (MIDOs), while the engineers are typically assigned to Aircraft Certification Offices (ACOs). (See Appendix 3.) The following describes inspectors' and engineers' work responsibilities.

### Flight Standards Aviation Safety Inspector (ASI)

ASIs work within the aviation community to promote safety and enforce FAA regulations. The majority of these inspectors specialize in areas such as operations, maintenance, and avionics, while a smaller number oversee cabin safety and dispatch functions. The role of these ASIs is to be the frontline FAA regulatory contact with the aviation industry. ASIs are responsible for ensuring that the aviation industry complies with Title 14 requirements of the Code of Federal Regulations (14 CFR), and helping entities they oversee operate safely and efficiently. ASIs also work with the aviation community to inform them of new requirements and help them interpret and comply with regulations, troubleshoot problems that involve compliance with regulations, and educate industry personnel in safe practices and procedures. The AFS ASIs provide oversight of aircraft operators (e.g. air carriers of all sizes, on-demand air carriers, general aviation operators and agricultural applicators), pilots, flight attendants, dispatchers, flight and maintenance schools, and maintenance facilities. At the headquarters level, an ASI may also develop FAA rules, policy, and guidance for operations, maintenance and avionics related areas.

### Aircraft Certification Manufacturing ASI

Manufacturing ASIs administer and enforce safety regulations and standards for the production and/or modification of, and continued operational safety of aircraft, aircraft engines and parts. During type certification programs and design evaluations, an ASI will inspect prototype or modified aircraft, aircraft parts, and avionics equipment for conformity with design specifications and safety standards. In addition, they make original airworthiness determinations and issue airworthiness certificates for all

civil aircraft, including modified, import, export, military surplus, experimental and amateur-built aircraft. ASIs are responsible for FAA certificate management of manufacturing facilities where they conduct evaluations and surveillance of production and quality control operations. These ASIs also conduct designee and delegation management and oversight within the scope of their respective responsibilities. At the headquarters level, an ASI may also develop FAA rules, policy, and guidance for production and airworthiness related areas.

#### Aircraft Certification Service Aerospace Engineer (ASE)

ASEs are responsible for evaluating design approval projects of aircraft, aircraft engines, and parts. They perform certificate management of design approval holders, including working with them to develop suitable corrective actions to address potential unsafe conditions. ASEs apply advanced engineering knowledge and experience in specific engineering disciplines such as airframe; systems; and equipment (electronics/avionics, electrical or mechanical); propulsion; and flight test. During type certification programs and design evaluations, an ASE establishes applicable airworthiness standards, reviews test plans, witnesses tests, and finds compliance. An ASE also conducts designee and delegation management and oversight within the scope of their respective responsibilities. At the headquarters and directorate levels, an ASE may also develop FAA rules, policy, and guidance for engineering related areas.

**Safety Technical Specialist Staff** – Positions that provide the support necessary for safety critical operational staff to efficiently and effectively do their jobs. This includes, but is not limited to, AVS personnel who:

- Evaluate and analyze the effectiveness of existing AVS certification, regulatory and compliance programs, activities, and methods;
- Develop new programs, activities, and methods for improved oversight activities and enhanced industry safety;
- Implement new programs and revised approaches directed by Congress, the Government Accountability Office, the Office of the Inspector General, National Transportation Safety Board (NTSB), and other oversight organizations;
- Design, develop, and deliver the technical training curriculum for the safety critical operational staff;
- Oversee and monitor the AVS designee programs;
- Provide information technology support;
- Maintain the airmen and aircraft registries and the airmen medical certification system; and
- Guide the development and publication of FAA rules and regulations through the rulemaking process.

**Operational Support Staff** – Consists of all AVS personnel, including managers, in functions that are not classified as safety critical operational staff or safety technical specialist staff, such as planning, finance, and administration.

Although AVS projected a total staffing level of 7,455 positions for FY 2012, AVS ended the year with 7,440 employees (Appendix 6). In FY 2013, the estimated staffing level for AVS is 7,455, although this does not include the effects of sequestration. In field office locations, AVS strives to have staffing ratios between safety critical and operational support positions of ten to one.

Figure 3 shows FY 2012 through FY 2014 actual and projected AVS staffing levels. The chart displays that aviation safety inspector and engineer staffing increases from previous years have been maintained.

**Figure 3: AVS Staffing (Operations Appropriation)**

| <b>End-of-Year Employment – Full Time Positions (FTP)</b> |  | <b>FY 2012<br/>Actual</b> | <b>FY 2013<br/>Enacted</b> | <b>FY 2014<br/>Request</b> |
|---|--|---------------------------|----------------------------|----------------------------|
| <b>Flight Standards</b>                                   | Engineers                                | 16                        | 12                         | 12                         |
|   | Aviation Safety Inspectors               | 4078                      | 4104                       | 4104                       |
|   | Safety Technical Specialists             | 464                       | 448                        | 448                        |
|   | Operational Support                      | 696                       | 690                        | 690                        |
|   | <b>Total</b>                             | <b>5254</b>               | <b>5254</b>                | <b>5254</b>                |
| <b>Aircraft Certification</b>                             | Aviation Safety Inspectors               | 256                       | 258                        | 258                        |
|   | Pilots, Engineers, and CSTAs             | 732                       | 734                        | 734                        |
|   | Safety Technical Specialists             | 174                       | 170                        | 170                        |
|   | Operational Support                      | 153                       | 157                        | 157                        |
|   | <b>Total</b>                             | <b>1325</b>               | <b>1319</b>                | <b>1319</b>                |
| <b>Aerospace Medicine</b>                                 | Physicians, Physician Assistants, Nurses | 52                        | 55                         | 55                         |
|   | Alcohol/Drug Abatement Inspectors        | 61                        | 68                         | 68                         |
|   | Safety Technical Specialists             | 215                       | 206                        | 206                        |
|   | Operational Support                      | 41                        | 40                         | 40                         |
|   | <b>Total</b>                             | <b>369</b>                | <b>369</b>                 | <b>369</b>                 |
| <b>Air Traffic Safety Oversight</b>                       | Air Traffic Safety Inspectors            | 55                        | 58                         | 58                         |
|   | Safety Technical Specialist              | 71                        | 68                         | 68                         |
|   | Operational Support                      | 5                         | 7                          | 7                          |
|   | <b>Total</b>                             | <b>131</b>                | <b>133</b>                 | <b>133</b>                 |
| <b>Rulemaking</b>   | Safety Technical Specialists             | 27                        | 33                         | 33                         |
|   | Operational Support                      | 3                         | 3                          | 3                          |
|   | <b>Total</b>                             | <b>30</b>                 | <b>36</b>                  | <b>36</b>                  |
| <b>Accident Investigation and Prevention</b>              | Air Safety Investigators                 | 7                         | 9                          | 9                          |
|   | Safety Technical Specialists             | 48                        | 50                         | 50                         |
|   | Operational Support                      | 9                         | 8                          | 8                          |
|   | <b>Total</b>                             | <b>64</b>                 | <b>67</b>                  | <b>67</b>                  |
| <b>Quality, Integration, and Executive Services</b>       | Safety Technical Specialists             | 122                       | 126                        | 12                         |
|   | Operational Support                      | 145                       | 151                        | 48                         |
|   | <b>Total</b>                             | <b>267</b>                | <b>277</b>                 | <b>60</b>                  |
| <b>Sub Total</b>  | <b>Safety Critical Staff</b>             | <b>6,378</b>              | <b>6,398</b>               | <b>6,284</b>               |
| <b>Sub Total</b>  | <b>Operational Support Staff</b>         | <b>1,062</b>              | <b>1,057</b>               | <b>954</b>                 |
| <b>Grand Total</b>  | <b>AVS Staff</b>                         | <b>7,440</b>              | <b>7,455</b>               | <b>7,238</b>               |

## AVS Staffing Model

In November 2003, Public Law 108-76 commissioned a study by the National Academy of Sciences to address ASI staffing practices and allocation decisions. A 2007 National Academy of Sciences report on inspector staffing within AFS and AIR stated that the then-current inspector staffing model for AFS did not provide information on the number of staff required or where staff should be located. The report recommended that a new staffing model be developed to provide such information. AFS subsequently created a staffing model to include the entire AFS workforce. AVS determined that there was a need to include other safety critical workforce employees within models. Currently AVS has staffing models for

AFS Inspectors and other employees and AIR Inspectors and Engineers to assist with identification of staffing resources and requirements.

To close the gap between onboard staffing levels and unaccomplished work, AVS is using specific demand equations by 14 CFR (e.g., Parts 91, 121, 135, 142, 145, and others) as well as by position type (e.g., operations, maintenance, avionics, or manufacturing). The AVS Staffing Tool and Reporting System (ASTARS Model) currently forecasts the inspector and engineering workforce requirements. The AFS safety technical specialist and operational support workforce are predicted within the AFS portion of the model using historic staffing ratios that compare managers and administrative support personnel to safety critical staff requirements. Model forecast data was used within this plan to support the FY 2015 through FY 2019 inspector staffing projections. The AIR ASE model was developed in FY 2012 and FY 2013 was the first year that model forecast data was available to support FY 2015 through FY 2019 engineering staffing projections for the Aircraft Certification Service.

ASTARS provides forecast data that identify AVS staffing levels needed to meet operator configuration, aircraft design, aircraft manufacturing and complexity requirements. Within the AFS portion of the model, formulas adjust for changes in operator information, such as size of the fleet, age of the fleet, make/model of aircraft, maintenance performance, employee certifications and experience, types of production approvals, and locations, among others. While ASTARS projections are used within this plan for AFS inspector positions, the model is continuing to be refined to incorporate operational changes within the organization as well as evolving industry business practices. Within the AIR portion of the model, aircraft manufacturing information, such as product design, aircraft part criticality, company experience and location are among factors that assist in the creation of a forecast for AVS inspectors.

The ASTARS Model forecasted out-year staffing requirements for AFS and AIR Inspectors and AIR Engineers in FY 2015 through FY 2019. As mentioned previously, operator configuration plays a major role in the number of AFS staff needed to meet workload demand. An operator's configuration consists of characteristics such as number of aircraft, types of aircraft (fixed-wing, helicopter, turbine engine, piston engine, reciprocating engine, etc.), scheduled or on-demand operations, domestic and foreign operation, number of employees, and location of operations. Some operators have changed fleet size, fleet mix, maintenance location, manufacturing tools/techniques and operating stations, and ASTARS predicts the need for employees to provide oversight and certification services based on those changes.

The current models within ASTARS provide forecast totals for slightly over 80 percent of AVS safety critical staff (approximately 5,100 positions). Additionally, AVS initiated data collection for aerospace engineers located in Aircraft Certification Offices (ACOs) in October 2011 and that forecast data is in the FY 2015 through FY 2019 requirements. The Aircraft Evaluation Group (AEG) and the FAA Safety Team (FAAST) workforce models were incorporated into ASTARS in FY 2013 with forecast data available in FY 2015 through FY 2019.

To help project a more accurate picture of future resource requirements, AVS is continuing to expand the staffing model to include additional safety critical occupational components. To improve out-year forecasts, AVS has also expanded the use of Labor Distribution Reporting (LDR) data in conjunction with the AFS Inspector Time and Motion Study data on work time reported for products and activities that have been completed. AVS has also developed and implemented Simulation and Forecasting modules in both the AFS and AIR Inspector components of the model. These modules allow for out-year simulations of staffing requirements based on projected changes in any or all variables used in the model forecasting algorithms.

While the 2012 workforce analysis focused on ASTARS workload drivers for ASIs, AVS continues to receive product and work activity counts for other activities that require personnel and financial resources, including enforcement investigations, new design approvals, airworthiness directives, airmen medical applications, ATO safety analysis and audits, and accident and incident investigations. These completed work products are reported annually and, when aligned with work hours, are used to assist AVS in identifying staffing requirements and trends such as labor increases or product complexity changes.

To help manage staffing resource and requirements as well as proactively “close the gap” between on-board staffing levels and unaccomplished certification and surveillance work, AVS is:

- Implementing a SMS;
- Leveraging designee and delegation programs; and
- Using SMS Tools, such as the Systems Approach for Safety (SAS), Aviation Safety Information Analysis and Sharing (ASIAS), Risk Based Resource Targeting (RBRT), Monitor Safety/Analyze Data (MSAD), and Aerospace Medicine Safety Information System (AMSIS).

## SMS

AVS is transforming its organization to employ an SMS-construct, as described in the *Aviation Safety Organization Safety Management System (AVSSMS) Implementation Plan*. SMS integrates the management of safety risk into business planning, operations, and decision making. It is a comprehensive, process-oriented approach to managing safety throughout an organization. SMS includes an organization-wide safety policy; formal methods for identifying hazards, controlling, and continually assessing risk and safety performance; and promotion of a safety culture.

The AVSSMS consists of four main components: Safety Policy, Safety Risk Management (SRM), Safety Assurance, and Safety Promotion. The components work together to enable AVS to manage the safety risk in the aerospace system.

- *Safety Policy* is the organization’s documented commitment to safety, which defines its safety objectives and the accountabilities and responsibilities of its employees in regards to safety.
- *SRM* is a process within the SMS composed of describing the system, identifying the hazards, and analyzing, assessing, and controlling risk.
- *Safety Assurance* includes processes within the SMS that function systematically to ensure the performance and effectiveness of safety risk controls and that the organization meets or exceeds its safety objectives through the collection, analysis, and assessment of information.
- *Safety Promotion* is a combination of training and communication of safety information to support the implementation and operation of an SMS in an organization.

The overarching goal of an SMS is to improve safety by helping to ensure that the outcomes of any management or system activity incorporate safety considerations. AVS is focusing the AVSSMS implementation on transforming AVS processes to create a more risk-based oversight system, allowing AVS to more efficiently allocate resources to identify, address, and mitigate risk in the aerospace system and focus those resources on the areas of greatest concern. The AVSSMS will build on existing processes, procedures, and tools, thereby enabling integration and interoperability across AVS Services/Offices.

In addition, AVS is promoting the implementation of SMS in industry. The FAA is pursuing rulemaking to require air carriers operating under 14 CFR part 121 to develop and implement an SMS to improve the safety of their aviation-related activities. The FAA is also considering rulemaking to require SMS for

other certificate holders (such as those operating under 14 CFR part 21 certificate holders) and is pursuing voluntary programs for SMS implementation in other segments of the industry. As SMS is implemented throughout industry, AVS will be able to leverage the outputs of those SMSs (such as safety risk analyses and safety assessments) in the oversight activities conducted within the AVSSMS. This will further allow AVS to focus on areas of greatest concern from a safety risk perspective.

Therefore, implementation of the AVSSMS and implementation of SMS in industry, will allow AVS to close the resource gap for safety critical staff by enabling AVS to more effectively and efficiently apply its resources to the areas of greatest concern in the aerospace system. This concept is illustrated in Figure 4.

### **Designee and Delegation Programs**

Because the FAA workforce will not grow as fast as industry, designees and delegated organizations are invaluable to the FAA. AVS delegates limited authority to private persons and organizations to perform functions on behalf of the Administrator. Through risk management, designees and delegated organizations allow the FAA to target our direct involvement to the most safety critical issues. AFS, AIR, and AAM oversee over 10,000 designees or delegated organizations. While designees and delegated organizations can provide some relief, the FAA needs to be able to continue to have direct involvement in high-risk areas, be able to perform those functions that under current regulations are assigned to federal employees, and conduct the necessary oversight.

To ensure standardization and consistency in designee management, AVS has made several improvements to its delegation system, including:

- Issuing FAA Order VS 1100.2, “Managing AVS Delegation Programs,” to define consistent requirements to manage designees across AVS;
- Establishing the AVS Delegation Steering Group comprised of representatives from each of the three S/Os with a delegation program. Because delegation management is a top priority, monthly status updates are provided to the AVS executive management team monthly and a full program briefing is provided at least annually;
- Consolidating and rewriting individual designee policies and processes to comply and align with the Delegation QMS process, simplifying the policies and procedures of the 14 individual designee types across the S/Os;
- Standardizing high-level designee management areas, including: appointment, selection, review, termination, and appeals; and
- Developing the Designee Management System (DMS), an automated tool that will support designee management functions and gather data for QMS process metrics and decision making regarding designee management at the individual designee level as well as programmatic levels.

### **SMS Tools**

To meet the challenges of a changing aviation environment, AVS and the aviation industry need to develop and implement advanced tools and techniques to assess and mitigate aviation risks before they become accidents. To complement the SMS, AVS developed several technological capabilities to mitigate accidents, including the Systems Approach for Safety (SAS), Aviation Safety Information Analysis and Sharing (ASIAS), Monitor Safety/Analyze Data (MSAD), Risk Based Resource Targeting (RBRT), and Aerospace Medicine Safety Information System (AMSIS).

The SAS includes two major initiatives: the design and development of the new and innovative business processes for the way AFS assures safety; and the design and development of the new Information Technology systems that support a much higher level of integration, interoperability, and efficiency. The SAS oversight system is being designed, developed and implemented under the System Approach for Safety Oversight (SASO) Program. The term “oversight system” encompasses the people, processes, systems, and regulations that make up AFS oversight capability.

The SASO will extend the System Safety approach to all aspects of aviation safety management and oversight. SASO will encourage the use of system safety based safety management by industry and transform AFS oversight from regulatory compliance to system safety. In conjunction with this transformation, SASO envisions a realignment of AFS systems to support System Safety processes and the integration of those realigned systems within the FAA Enterprise Architecture.

ASIAS enables users to perform integrated queries across multiple databases, search an extensive warehouse of safety data, and display pertinent elements in multiple formats. AVS expanded its ASIAS capabilities to aggregate and integrate safety information from across the aviation industry. By developing new analytical methodologies and leveraging state-of-the-art information technology, AVS and its industry stakeholders are able to monitor the effectiveness of implemented safety enhancements, establish baselines and trending capability using safety metrics, and identify emerging risks from safety data from multiple databases.

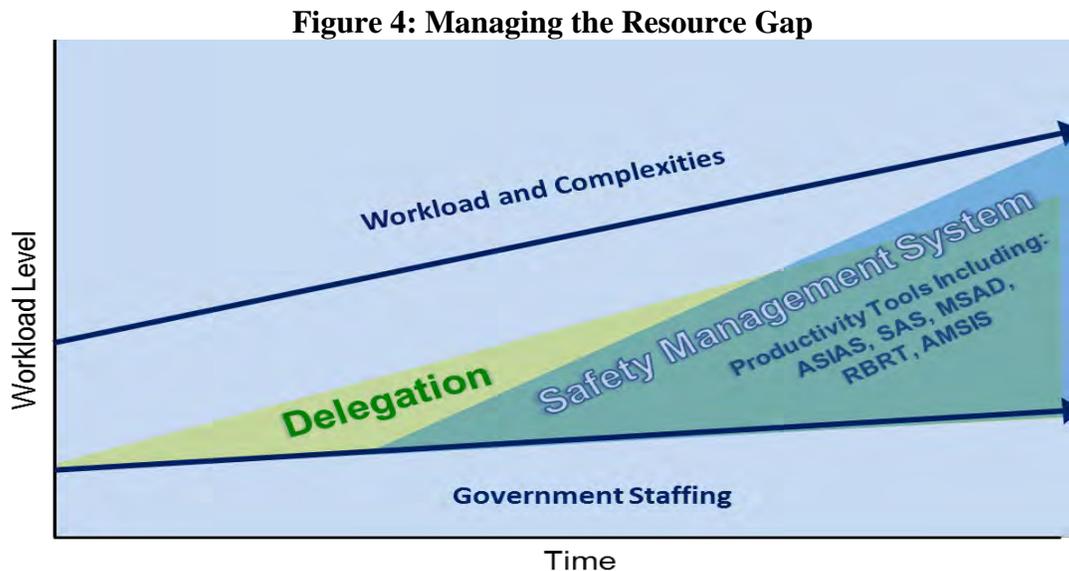
AIR uses the MSAD process and IT tool to analyze event-based data to identify the appropriate response to significant events in support of continued operational safety, and to detect trends that could lead to future events. The MSAD process helps us identify safety issues in in-service aircraft fleets, and identify corrective actions to mitigate safety risks across the fleet. The process uses product defined hazard criteria to surface potential hazards from aviation safety data. With MSAD, AIR can better identify emerging safety trends through dependent variable analysis. In addition, MSAD establishes a causal analysis approach. This approach may identify underlying contributing factors, such as process breakdowns, which are then communicated to the appropriate AVS oversight business process owner.

The RBRT process and IT tool assess risk and identify risk management options in order to establish work priorities and allocate resources. It is a sub-process used in other AIR business processes such as type and production certification, certificate management, and designee management. This process establishes risk thresholds that provide a consistent approach for AIR involvement and prioritization decisions, thereby allowing AIR to manage resources with a consistent understanding of the risks based on data. RBRT provides a means to identify what activities warrant the assignment of FAA resources and allows us to make risk-based business and safety decisions.

AMSIS will provide a state-of-the-art aerospace medical information network that integrates critical medical information from geographically distributed locations nationally and internationally. The program re-engineers AAM safety program business processes; designs and develops new information systems architecture; designs, procures and deploys next generation information systems. The program provides tools necessary for AAM to analyze information to make risk-based policy decisions through an automated method of collecting, reviewing, and analyzing medical information for airmen and air traffic control specialist (ATCS). The system will ensure timely and comprehensive access to data by reducing delays, thereby improving timeliness and accuracy while eliminating paper based correspondence. AMSIS will also enable collaboration within the aviation community, both domestic and international, as well as among personnel, designees, and applicants.

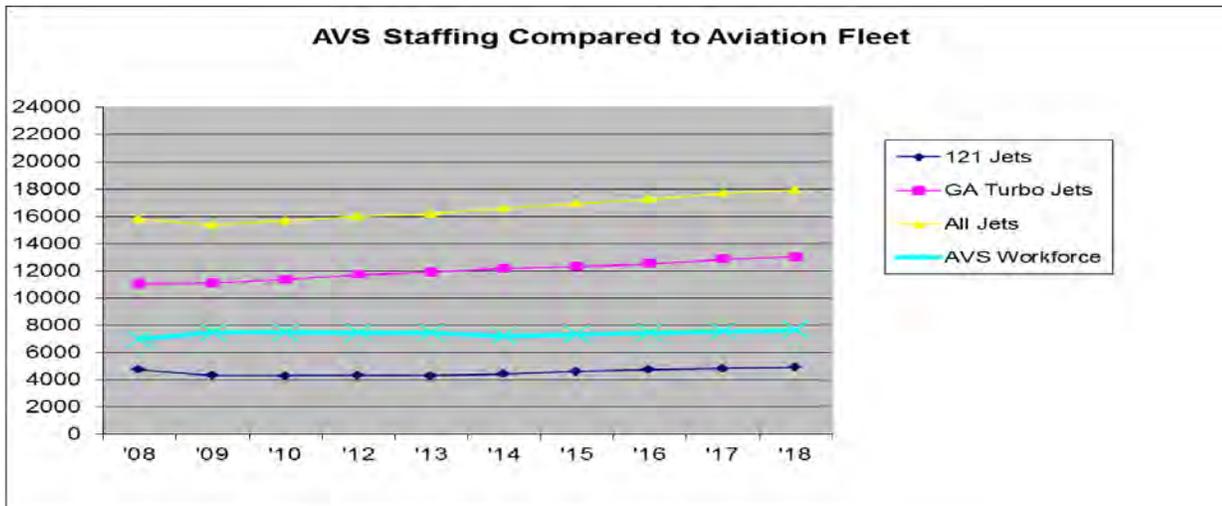
The AMSIS program has interdependencies with FAA investments. Programs such as the Aviation Safety Knowledge Environment (ASKME), Regulation and Certification Infrastructure for System Safety (RCISS), ASIAs and NextGen require certification information on pilot, controllers and safety personnel from within and external to AVS. AMSIS will enable collaboration with internal FAA programs and internationally among ICAO countries as well as improve the timeliness of significant findings to address NTSB reports.

Technologies such as SAS, ASIAs MSAD, RBRT, and AMSIS will assist in mitigating the gap between increased workload and complexities with the limited staffing resources. Figure 4 illustrates these productivity tools and the relationship between workload and staffing levels describing how AVS plans to manage the resource gap.



To meet projected increased workload within the aviation industry in the out-years and to minimize the resource gap, AVS continues to focus its resources on the areas of highest risk through SMS, expand use of designees, and increase data-driven decision making through SAS, ASIAs, MSAD, RBRT, and AMSIS.

**Figure 5: Change in Aviation (Part 121 Jets and GA Turbo Jets)**

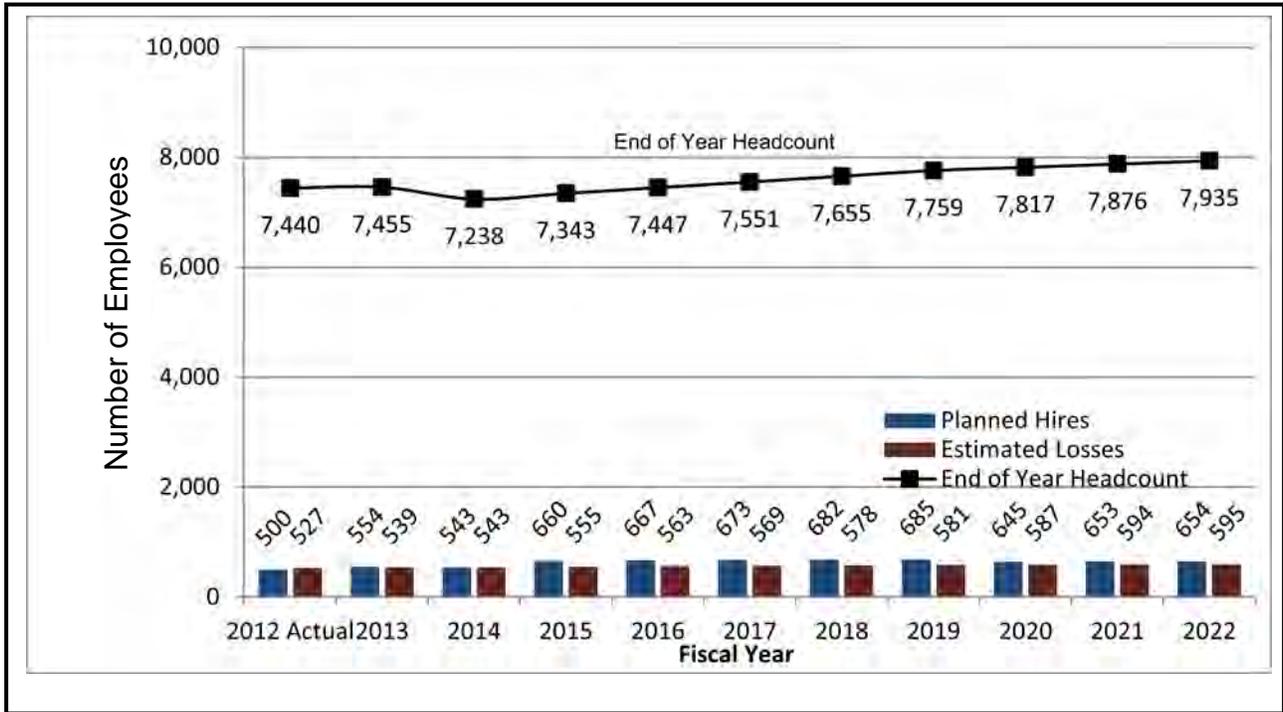


### Staffing Gains

To sustain the safety continuum, ensure uninterrupted support to new entrants, and maintain the continued operational safety of the NAS, AVS forecasts workload growth based on the ASTARS model for AFS and AIR and FAA/aviation fleet and operations forecast (Figure 5). The size of the fleet, while an indicator of workload, is only one of the drivers associated with demand for service. Operator configuration/complexity is the primary demand driver for the Flight Standards Service, while aircraft design and manufacturing are the primary drivers for the Aircraft Certification Service. The requirement for AVS services is driven by industry characteristics, such as number of aircraft, types of aircraft (i.e., fixed-wing, helicopter, turbine engine, reciprocating engine), scheduled and on-demand operations, domestic and foreign operations, number of company employees, experience of employees, and location of operations and manufacturing facilities.

Although forecasts indicate industry and stakeholder demands on the NAS will continue to be constrained over the next two years, long-term aviation operations in the NAS are projected to slightly increase from FY 2014 to FY 2022. AVS has modeled incremental staffing growth between 1.4 percent in the near term and less than 1 percent per year in the out-years for the entire workforce (Figure 6). The staffing increases modeled in FY 2015 through FY 2019 are based on workload demand forecasted within ASTARS. AVS is forecasting the need for 105 positions in FY 2015 to meet anticipated demand and an additional 104 positions per year starting in FY 2016 through FY 2019. To meet anticipated workload demands, AVS will improve SMS; improve designee management programs; and leverage its SMS tools. These programs are being developed to increase safety and are also anticipated to increase efficiency of the AVS workforce. AVS is also continuing to refine the ASTARS model to ensure that out-year staffing forecast represent organization and industry changes.

**Figure 6: AVS Staffing Totals**

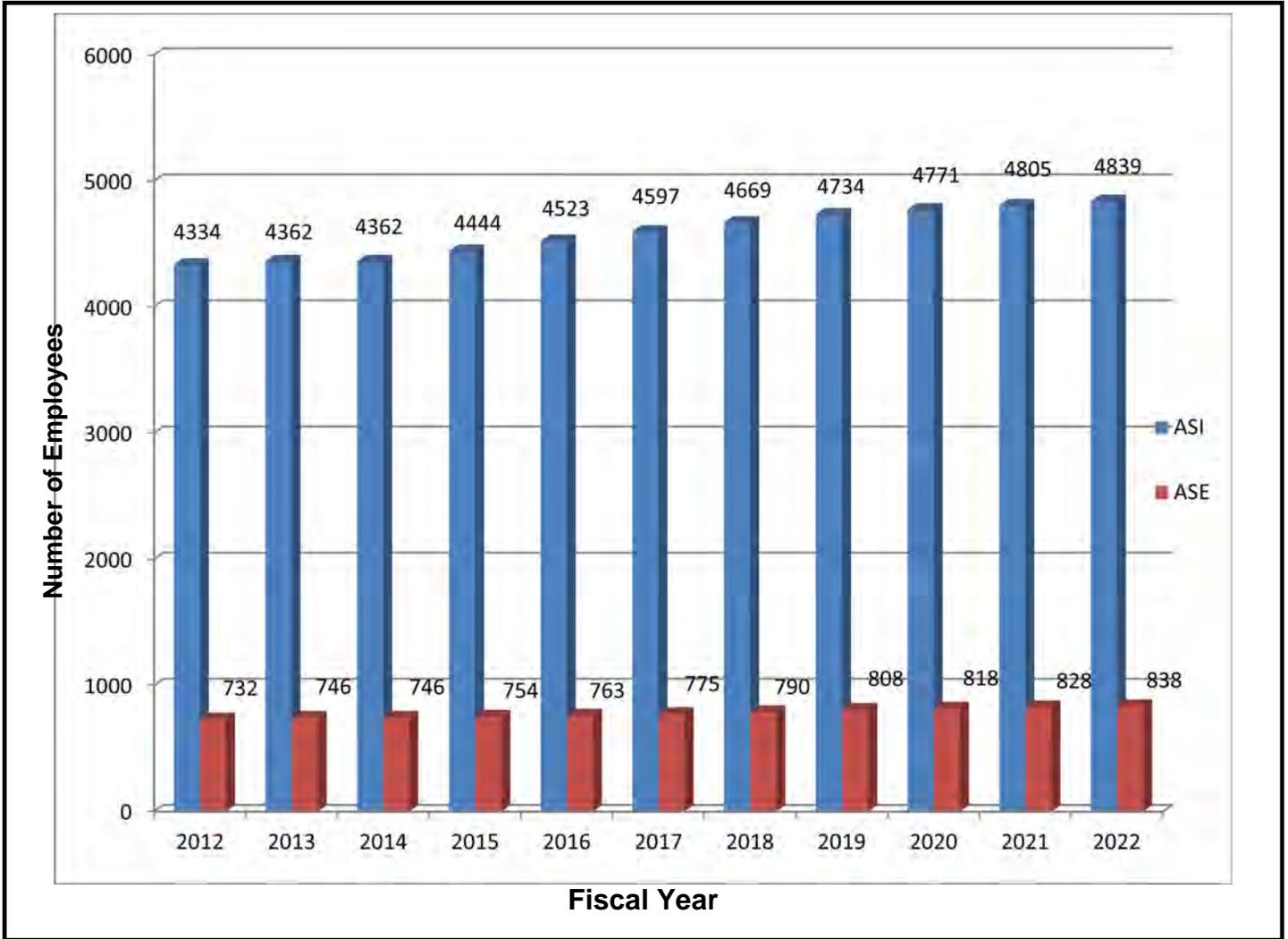


**NOTES:**

1. FY 2012 – FY 2013 staffing totals are based on FY 2012 Actual Level, and FY 2013 Budget Request.
2. FY 2015 through FY 2019 staffing projections are based on the AVS Inspector and Engineering Staffing Model and service demand drivers.
3. FY 2020 through FY 2022 staffing projections based on FAA/Industry forecasts.

Figure 7 shows staffing growth for the two largest AVS workforce components, ASIs and ASEs. The chart assumes incremental staffing growth beginning in FY 2015 ranging from 0.0 percent to 1.7 percent per year.

**Figure 7: Aviation Safety Inspector / Aviation Safety Engineer — Staffing**



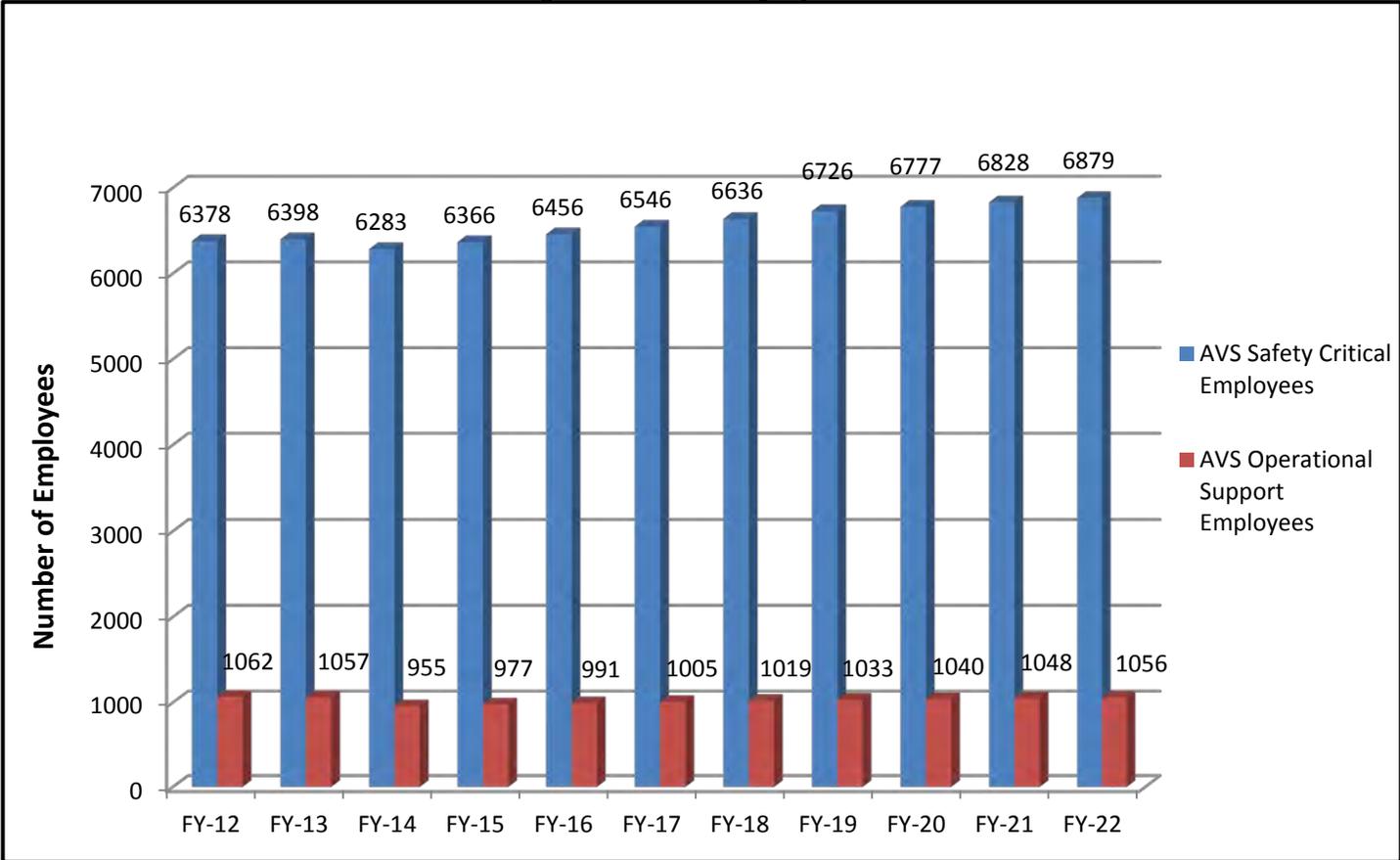
**NOTES:**

1. FY 2012 – FY 2014 staffing totals are based on FY 2012 Actual Level, and FY 2013 and FY 2014 Budget Request.
2. FY 2015 through FY 2019 staffing projections are based on the AVS Inspector and Engineering Staffing Model and service demand drivers.
3. FY 2020 through FY 2022 staffing projections based on FAA/Industry forecasts.

### Staffing Requirements

AVS is comprised mostly of safety critical employees, such as inspectors, engineers, pilots, physicians, nurses, and accident investigators. Operational support positions in field offices and headquarters provide management and administrative support to safety critical operational and technical specialist staffs. Figure 8 projects incremental growth for AVS staffing for FY 2015 through FY 2022 of approximately 0.1 percent per year. In FY 2014, AVS has a staffing reduction aligned with a base transfer of 217 IT positions to AFN.

**Figure 8: AVS Employees**



**NOTES:**

1. FY 2012 – FY 2014 staffing totals are based on the FY 2012 Actual Level, and FY 2013 and FY 2014 Budget Request.
2. FY 2015 through FY 2019 staffing projections are based on the AVS Inspector and Engineering Staffing Model and service demand drivers.
3. FY 2016 through FY 2022 staffing projections based on FAA/Industry forecasts.

## Staffing Losses

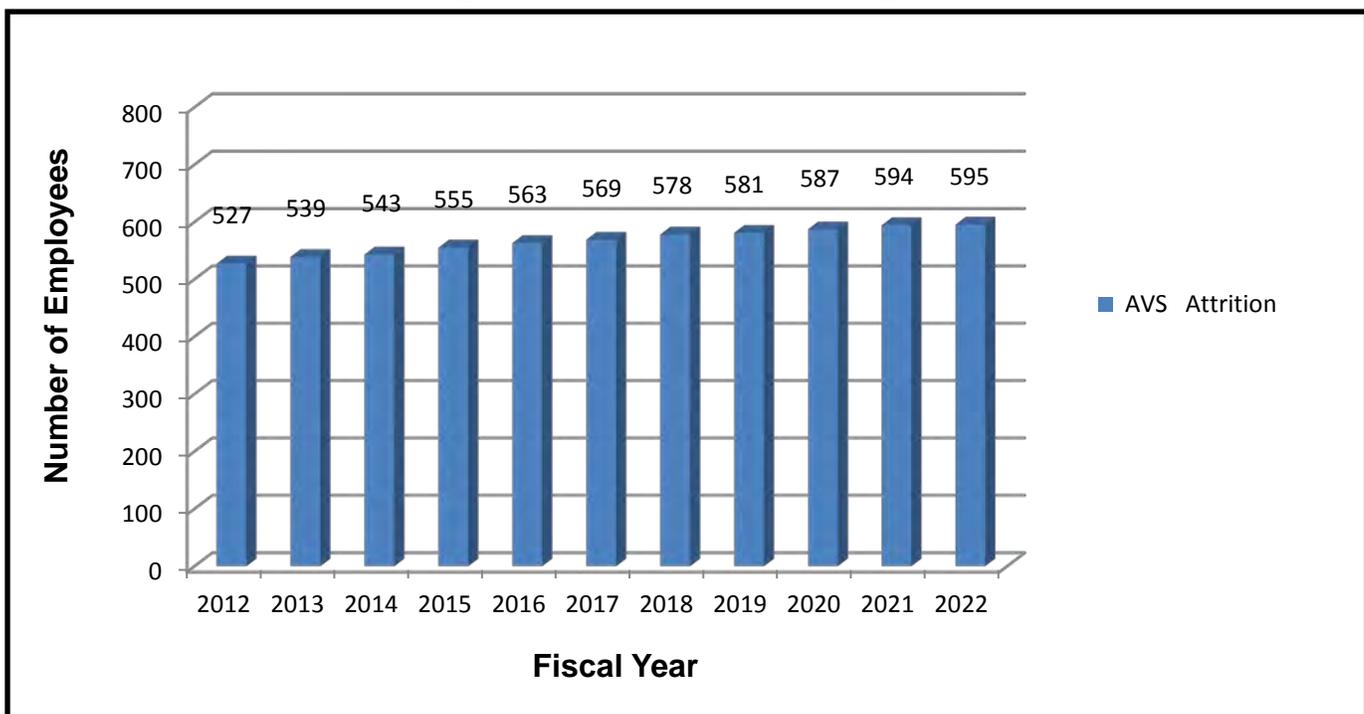
### Attrition

AVS loses personnel to retirements, resignations, removals, deaths, and to other FAA line of business or other agencies. From FY 2005 through FY 2010, the AVS annual attrition rate ranged from 6 to 9 percent. In FY 2012, AVS had an attrition level of 7.1 percent, or 527 positions, of which 264 (50 percent) were retirements. We project the attrition rate will continue to be between 6.7 and 7.4 percent based on forecasted increases in employee retirement eligibility and the improving national economy. In FY 2013, AVS projects a loss of 539 employees, of which 276 are expected to be retirements. In FY 2014, AVS forecasts attrition will be approximately 7.3 percent, or 543 employees, of which 277 are expected to be retirements.

Because AVS hires many mid- and late-career professionals with extensive industry experience, we have a more mature workforce than other FAA lines of business. Unlike air traffic controllers, AVS employees do not have a mandatory retirement age. They join the FAA later and generally retire later in their career. The average age of AFS and AIR ASIs is 55, while the average age for AIR aerospace engineers (ASE) is 50. In FY 2012, approximately 29 percent of AVS's ASI workforce and 15 percent of its ASE workforce were eligible to retire. For ASI and ASE attrition, AVS assumes annual rates between 7 and 7.5 percent over the next 10 years, which are slightly higher projections than for other occupational series because they are a more senior population and more likely to retire.

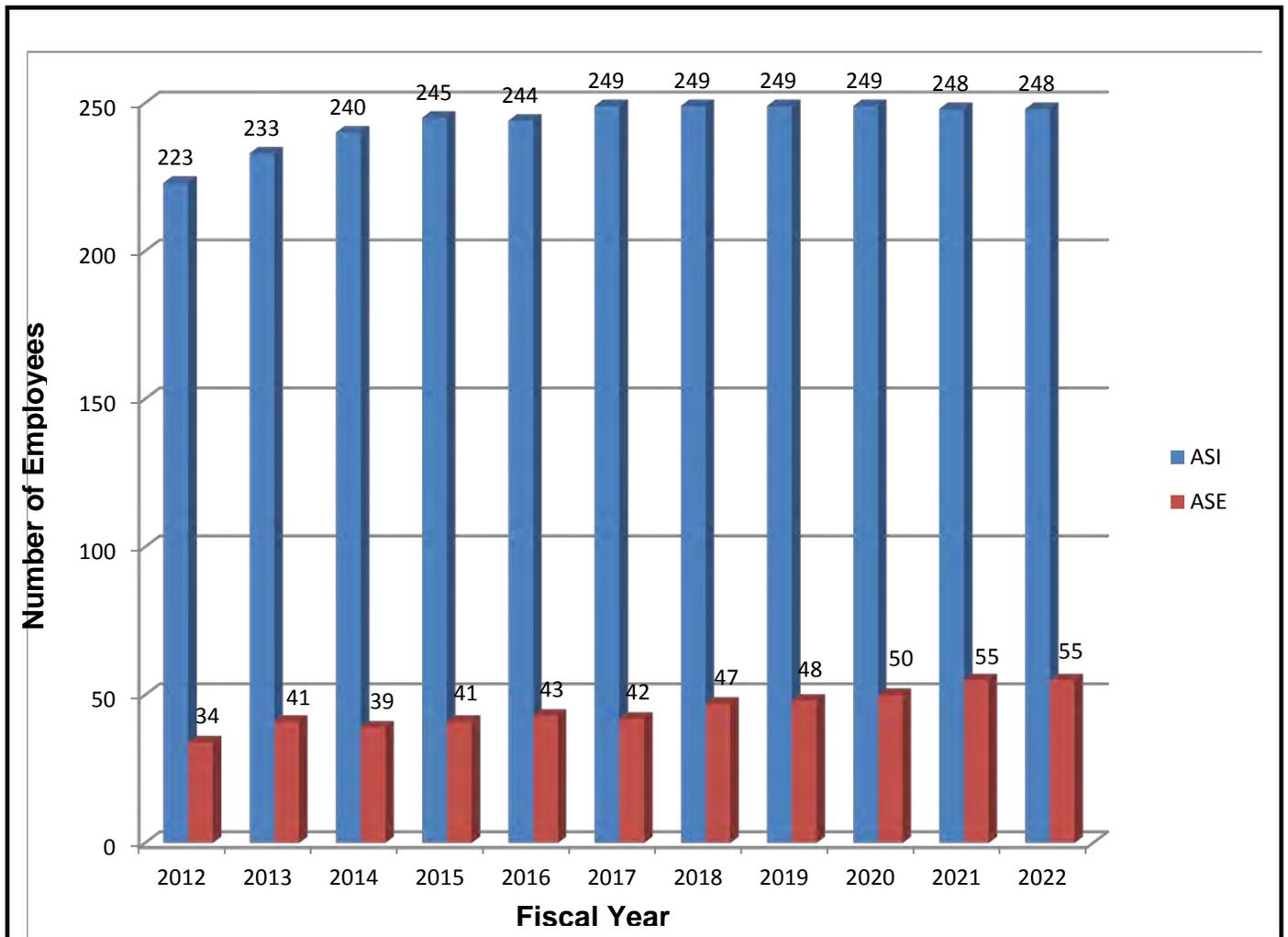
Figures 9 and 10 are projections of the estimated staffing losses for the AVS workforce and safety critical ASI and ASE categories. The charts assume the overall AVS attrition rate will be between 7 and 7.4 percent over the next 10 years.

**Figure 9: AVS Estimated Staffing Losses**



**NOTE:** In FY 2014, AVS anticipates approximately 217 positions to transfer from AQS to AFN. This table above does not include the proposed transfer of positions. The table will be modified in the next Work Force Plan if the transfer is approved.

**Figure 10: Aviation Safety Inspector / Aerospace Engineer — Estimated Staffing Losses**



## Hiring

### Safety Critical Hiring

Since a growing percentage of its leadership and safety critical workforce is eligible to retire within the next five years, in order to sustain uninterrupted safety services, AVS focuses on maintaining a pipeline of skilled employees who are prepared and capable of taking on increasing responsibility within the organization. To forecast gaps, AVS continuously monitors attrition within its leadership cadre and safety critical workforce. AVS also implements succession strategies and programs to ensure continuity in its leadership and targets its recruitment in key occupations to support accomplishment of the safety mission.

Considering the following factors, AVS identifies and adjusts the organization's recruitment and retention strategy, if necessary, to meet current and future needs:

- Number and distribution of positions by pay plan/grade or pay band/series and geographic location;
- Diversity trends;

- Identification of skill competencies required;
- Average grade/band by occupation;
- Retirement eligibility (current and expected); and
- Attrition (separations, resignations, transfers, retirements).

Figure 11 is a projection of estimated hiring gains and staffing losses of the AVS workforce over the next 10 years. The table compares FY 2012 actuals to FY 2013 and out-year projections.

**Figure 11: AVS Projected Staffing**



**Safety Critical Recruitment**

To successfully operate in a more collaborative and technologically advanced SMS and NextGen environment, AVS continues to build a workforce that is adept at risk-based, data-driven decision making as well as systematic and critical thinking. However, AVS is competing with private industry to recruit the best candidates from a very limited talent pool.

This is especially true in the field of aerospace engineering. As the number of people entering specialized technical aviation fields continues to decrease, the competition to hire them continues to increase. As a

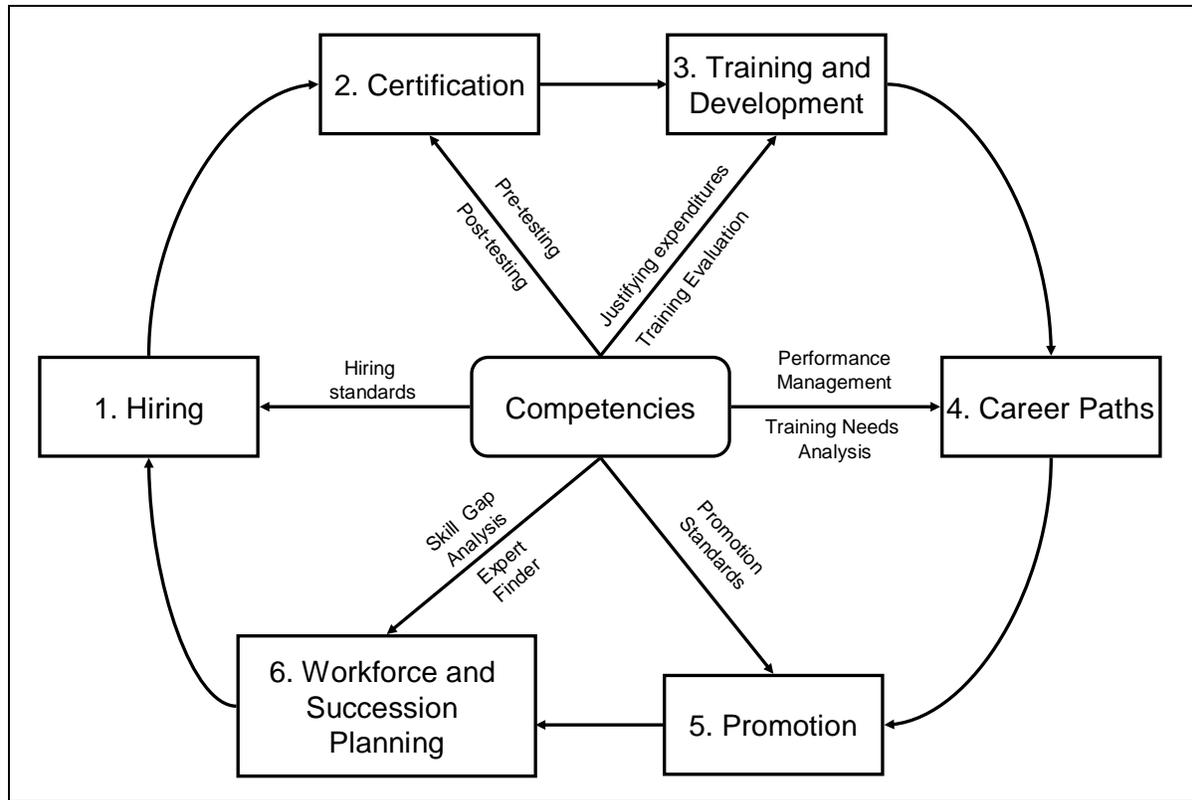
result, it has become particularly difficult for AVS to recruit engineers, resulting in one of its most significant workforce challenges.

In FY 2010, AVS developed and implemented a recruitment plan to ensure the organization is attracting and hiring talented applicants from diverse backgrounds to close these gaps. As part of this plan and in support of FAA's Destination 2025 goal of creating a workplace of choice marked by integrity, fairness, diversity, accountability, safety and innovation, AVS is currently piloting the Standardized Hiring for AVS Rating and Referral Program (SHARP). This program puts in place a more structured, consistent hiring process for targeted safety critical positions. This pilot covers the General Aviation Maintenance and Operations Inspectors, FG-1825-12 and below; Manufacturing Aviation Safety Inspectors, FG-1825-12 and below and Aerospace Engineers, FV-861-I. An evaluation of the SHARP pilot with recommendations for improvements will be conducted by September 30, 2013.

The primary recruitment and hiring vehicle utilized by AVS to hire its workforce is through the Automated Vacancy Information Access Tool for On-Line Referral (AVIATOR), which is an automated hiring system utilized by applicants, managers, and human resource professionals to facilitate the overall application and selection process for positions. The AVIATOR system is managed and maintained by the FAA's Office of Human Resource Management (AHR). This year AHR's AVIATOR system was integrated into the Office of Personnel Management automated hiring system, USAJOBS. This allows us to reach a wider pool of candidates for all of our positions.

AVS continues to use the FAA's Managerial and Employee Leadership Competency Profiles to correlate and define interpersonal and business competencies when recruiting for positions. This "Core" competency model, illustrated in figure 12, is used to meet the hiring challenges anticipated in the future aviation environment by describing a baseline-mastery level of core business and interpersonal competencies, as well as specific technical competencies required across the organization.

**Figure 12: A Competency-Based Workforce Management System**



This competency model allows the competencies of individual employees to be compared against the requirements of individual positions across AVS. As a result, competencies enable individuals to:

- Better understand how their individual and group job functions support the AVS mission; and
- Identify how their individual competency profiles compare to the competencies required across AVS.

Utilizing assessment tools effectively ensures AVS can fill safety critical positions with individuals who possess the needed skills to support the implementation of SMS, and NextGen. Specifically, the competency model provides a systematic approach of looking at the entire lifecycle of any existing position to determine what is required in order for the incumbent to successfully perform the duties assigned.

AVS also continues to use core interpersonal and business competencies as a part of the knowledge, skills, and abilities (KSAs) when creating vacancy announcements. In FY12, the majority of AVS vacancy announcements included competencies that supported SMS and NextGen as well as interpersonal and business requirements. In collaboration with the Office of Human Resource Management, AVS has made a commitment to conduct a job analysis on all of its position to ensure that an accurate and timely assessment of the duties to be performed and competencies required are identified prior to recruiting and filling positions. In addition, the Hiring Reform Initiative and recently established HR policies and procedures require that we incorporate this practice in all of our hiring programs, thus, eliminating the need to further set short/long-term goals on competencies.

AVS will also focus its collaborative efforts with Human Resources on developing hiring procedures, conducting briefings and providing training materials for hiring managers to keep them informed and

equipped with resources/tools necessary to successfully hire the candidates with the right skill sets to successfully perform duties as assigned.

## **Operational Support Hiring**

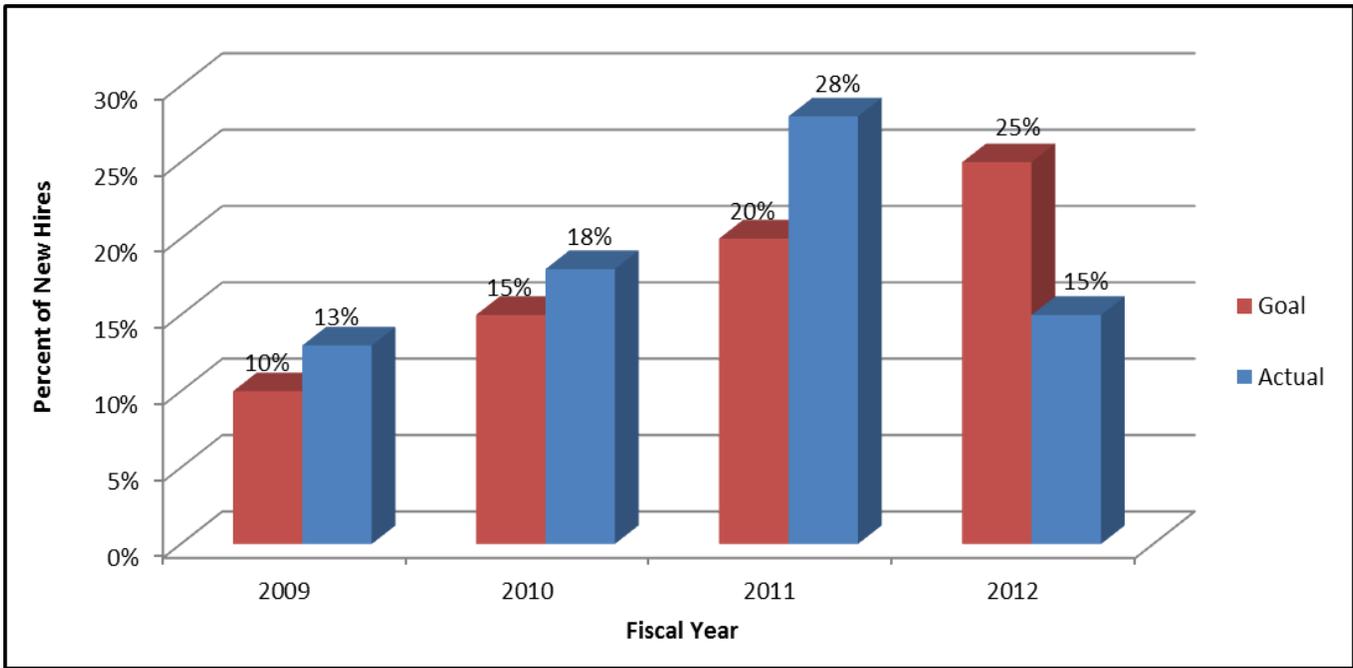
Because of the level of expertise required to ensure the safety of the NAS, AVS is comprised mostly of technical employees such as inspectors, engineers, pilots, physicians, nurses, and accident investigators. Operational support personnel in field facilities, regional and headquarters offices provide business and administrative support to technical employees.

Although there is significant emphasis placed on hiring initiatives for safety critical positions, AVS is equally committed to attracting and retaining its operational support workforce. AVS is currently not experiencing significant challenges in hiring and staffing operational support positions. In contrast to the limited number of qualified candidates available to fill safety critical positions, AVS continues to benefit from a growing talent pool of qualified operational support candidates due to nationwide employment uncertainty.

### **Hiring Entry Level Staff**

In an effort to strengthen the AVS pipeline of candidates who will eventually replace retiring leaders, AVS continues to focus on its established goal of recruiting new hires in safety critical occupations at lower pay bands/grades. For example, target ASI recruitment efforts are at grades 9 to 11 or equivalent pay bands. The goal for FY 2012 was to recruit 25 percent of new hires in developmental positions or other positions that lead to safety critical positions. We did not meet this goal. Because the majority of our losses were highly experienced personnel, the technical knowledge and skill requirements for their replacements exceeded those of entry level candidates. Of the 245 new employees we hired for safety critical positions, only 15 percent hired during FY 2012 were at the lower pay bands/grades. Figure 13, below, provides historical data of the safety critical hiring goals and the percentage amounts in which AVS previously exceeded those goals.

**Figure 13: Safety Critical New Hires at Lower Pay Bands/Grades**



### Partnering and Outreach Initiatives

To support FAA's Destination 2025 goal of creating a workplace of choice marked by integrity, fairness, diversity, accountability, safety and innovation, the AVS Associate Administrator and the AVS Management Team sponsored the creation of the AVS Diversity and Inclusion Tiger Team. This team was challenged to create a strategic work plan that would set long-term goals, strategies, and actions to help managers successfully recruit, hire, promote, educate, and retain a more diverse workforce. Since diversity and inclusion go hand in hand, they were also challenged to identify ways that all of AVS can work together to build a culture that encourages respect, collaboration, flexibility, and fairness. This plan represents the AVS senior executive management team's commitment to developing and maintaining the workforce of the future and to becoming the workplace of choice by recruiting, hiring, and retaining a qualified, diverse workforce that better mirrors the world we live in.

The team was co-chaired by the Director of the Aircraft Certification Service and the President of the National Hispanic Coalition of Federal Aviation Employees. The team was comprised of representatives from FAA Employee Associations, Special Emphasis Program Manager, as well as AVS service/office employees, Office of Human Resource Management, Office of Civil Rights, and the Office of Chief Counsel. The draft work plan (AVS Diversity and Inclusion Work Plan) was developed in FY12 and presented to the AVS Management Team on October 30, 2012. AVS is in the process of implementing initiatives targeted for FY13. The plan's major goals and priorities are:

**Goal 1: Workforce Diversity:** AVS shall recruit from a diverse, qualified group of potential applicants to secure a high-performing workforce drawn from all segments of American society.

Priority 1.1 Design and perform strategic outreach and recruitment to reach all segments of society.

Priority 1.2 Use strategic hiring initiative for people with disabilities (PWD) and for veterans, conduct barrier analysis, and support Special Emphasis Programs (SEPs), to promote diversity within the workforce.

Goal 2: Workplace Inclusion: AVS shall cultivate a culture that encourages collaboration, flexibility, and fairness to enable individuals to contribute to their full potential and further retention.

Priority 2.1 Promote diversity and inclusion in leadership development programs.

Priority 2.2 Cultivate a supportive, welcoming, inclusive and fair work environment.

Goal 3: Sustainability: AVS shall develop structures and strategies to equip leaders with the ability to manage diversity, be accountable, measure results, refine approaches on the basis of such data, and engender a culture of inclusion.

Priority 3.1 Demonstrate leadership accountability, commitment, and involvement regarding diversity and inclusion in the workplace.

Priority 3.2 Fully and timely comply with all Federal laws, regulations, Executive orders, management directives, and policies related to promoting diversity and inclusion in the Federal workforce.

## **Compensation Incentives**

To better compete with private industry recruitment practices, AVS offers a limited number of incentives, such as leave enhancements, new hire pay flexibilities, telework, and degree completion programs.

## **Employee Engagement**

Once AVS has hired an employee, the focus shifts to retention. To increase employee satisfaction and engagement levels, AVS continues to strive to become the “Workplace of Choice” by ensuring:

- Employees have the opportunity to participate in development programs to strengthen leadership skills;
- Employees have a professional, open, transparent, and safe culture to work in that encourages innovation, empowerment, and growth;
- Training stays current with agency strategic challenges and strengthens leadership and technical competencies;
- Senior leaders take a more active role in communicating with and engaging employees by:
  - Using Town Hall meetings to update AVS employees on current activities and accomplishments;
  - Conducting Site Visits by members of the AVS management team to offices throughout the country, which provides management the opportunity to hear about safety issues and concerns directly from employees;
  - Encouraging participation in the U.S. Department of Transportation’s (DOT) IdeaHub, a DOT-wide online collaborative tool used to create ideas and help shape solutions for improving FAA’s workplace. It empowers employees to develop, rate, and improve innovative ideas on a wide range of topics;
  - Distributing the AVS Flyer, an internal communications resource that is emailed to all AVS employees biweekly. It serves as another communication tool to highlight the great accomplishments of the workforce in a timely fashion;
  - Holding various meetings and conferences to provide managers and other employees the resources and skills needed to better support day-to-day operations. The group shares

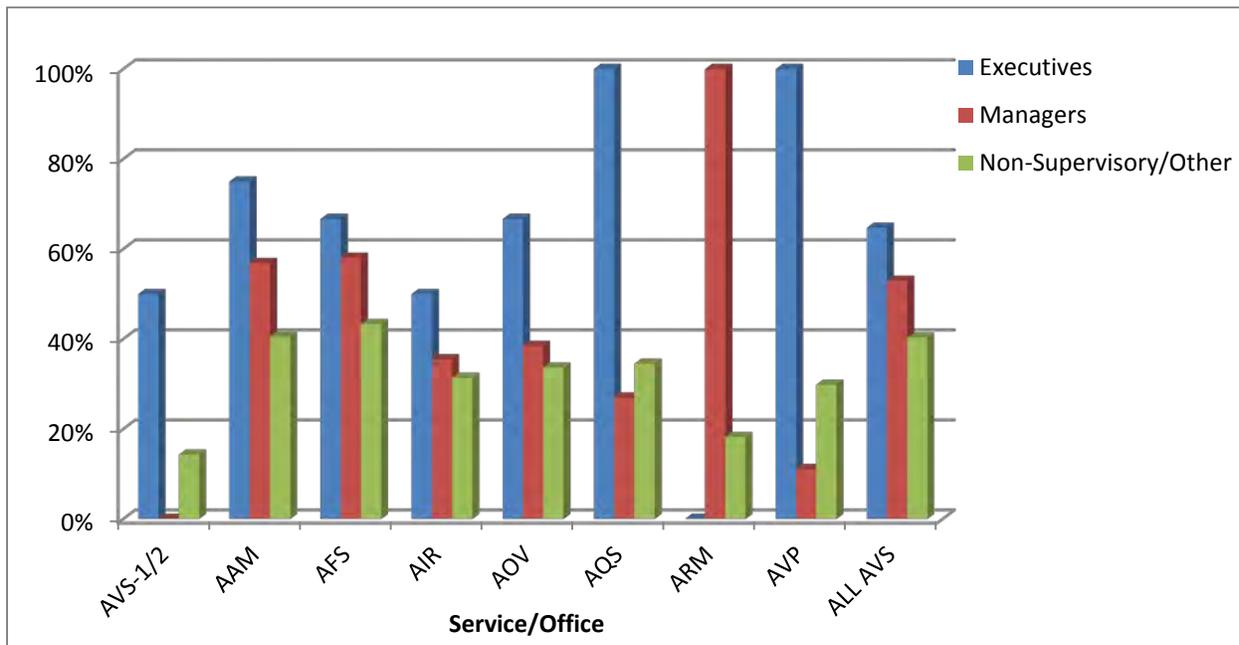
lessons learned, identifies best practices, and makes recommendations for areas of improvement; and

- Executive participation in panel discussions at the Aviation Safety Overview and AVS New Managers classes.

### Succession Planning

Currently, AVS has 3,172 employees who will be eligible to retire by September 30, 2017. Fifty-three percent of AVS managers and 65 percent of AVS executives (22 of 34) will be eligible to retire. Due to the high percentage of executives and managers eligible to retire, AVS focuses succession planning efforts on leadership positions across all job series, not just safety critical positions. AVS manages its talent pool and maintains a pipeline of trained and capable professionals who can seamlessly assume leadership positions as they become vacant without interrupting the provision of safety services. AVS continues to equip and develop its workforce with the leadership skills necessary to successfully sustain these safety services through specialized training and leadership development programs, including: AVS’ Leadership, Enhancement, and Development Program (LEAD), the FAA’s Senior Leadership Development Program (SLDP), and the FAA’s Program for Emerging Leaders (PEL). Figure 14 shows the number of leadership positions compared to non-supervisory employees that are eligible to retire (with a full annuity) within the next five years.

**Figure 14: Leadership vs. Non-Supervisory Positions Eligible to Retire Within 5 Years**



**NOTES:**

1. Retirement Eligibility by September 30, 2017.
2. AVS-1/2 represents the AVS Executive Office.
3. AVP, AQS and ARM are made up of two or fewer Executives.

## **Training**

AVS continues to develop its workforce by providing the right training to the right people at the right time, ensuring employees have the knowledge and skills needed to respond to future aviation safety challenges and to assume roles of increasing responsibility within AVS.

Although AFS, AIR, AAM, and AOV maintain their own training organizations, their efforts align with and support AVS's overarching workforce development program, which focuses on the development, delivery, and evaluation of specialized technical training. The organization's workforce development goals include:

- Identifying training needs and requirements for inspectors, engineers, and other safety critical occupations;
- Providing training and professional development opportunities to fill any skill or competency gap and to enhance current performance;
- Continuing to utilize technology for training delivery as appropriate (e.g., BlackBoard);
- Promoting information sharing and standardization of business processes, and
- Maintaining technical currency and proficiency in areas of expertise.

Specific AVS corporate activities include:

- Providing an AVS 101 Webinar to all new hires;
- Implementing standards for an AVS On-Boarding Program;
- Redesigning the AVS Overview Course for new employees and the AVS New Managers Course to update the content and incorporate the concept of diversity and inclusion;
- Assessing development opportunities for at least one non-technical occupational series; and
- Continuing to incorporate standard messages and concepts on AVS programs (e.g., QMS, SMS, and NextGen) into S/O specific training.

## **Managerial/Leadership Training**

In FY 2013, AVS will continue to review leadership development opportunities in collaboration with the FAA Office of Learning and Development and other FAA lines of business, particularly the ATO. This assessment will identify gaps between the Agency-level program and AVS requirements. AVS continues to assess the best way to meet those requirements, whether at a corporate level or at the Service/Office level.

The Flight Standards Service (AFS) has been very active in the area of management and training. AFS has established an AFS Managers Curriculum Oversight Team (COT) to manage the Flight Standards Management staff training curriculum, implement content that focuses on leadership and communication skills and streamline content across various mandatory training courses. In addition, the COT will oversee the common curriculum requirements that impact multiple courses in the curriculum, provide corporate leadership on larger training strategies and policies that impact the training required by managers, and ensure that the Curriculum Oversight Steering Committee understands the needs of this curriculum. AVS is currently monitoring the AFS initiatives to consider expanding AFS management and leadership activities across all the AVS services and offices.

## **Initial Technical Training**

The total training provided for new safety critical staff varies across the different S/Os and ranges from two to 15 weeks depending on the specialty. For most employees, initial technical training is provided within the first 12 months of employment. AVS uses a blended training delivery model where components of the training are delivered through on-line courses and other components are delivered in the classroom.

AFS has four main areas of technical specialization, with each requiring a series of initial courses called “string training”:

- General Aviation Operations;
- General Aviation Airworthiness;
- Air Carrier Operations; and
- Air Carrier Airworthiness.

AIR requires a series of initial courses for all Safety Critical Operational staff and encourages all other staff to take these initial courses as well. The Safety Critical Operational staff also has required job function training in their area of specialization.

- Aerospace Engineering (Airframe, Propulsion, Systems, and Software); and
- Aviation Safety Inspection-Manufacturing.

Other technical specialties in AVS, such as Drug Abatement Inspectors, Air Traffic Safety Inspectors, and Rulemaking staff, receive structured initial technical training specific to their field of expertise.

### **Additional/Recurrent Technical Training**

After AVS employees complete the initial technical courses, additional training needs are identified during annual calls for training requirements. Supervisors work with their employees to determine what kind of training they need and when they need it. They also evaluate the skill sets represented in their offices to determine if any additional skills are needed. For example, inspectors, designee advisors, and flight test pilots are required to receive initial and recurrent training that is tailored to their particular job responsibilities. Training requirements are reviewed annually by the supervisors and their employees. This process ensures that employees have input for any training that they believe is needed to keep pace with changes in the aviation industry.

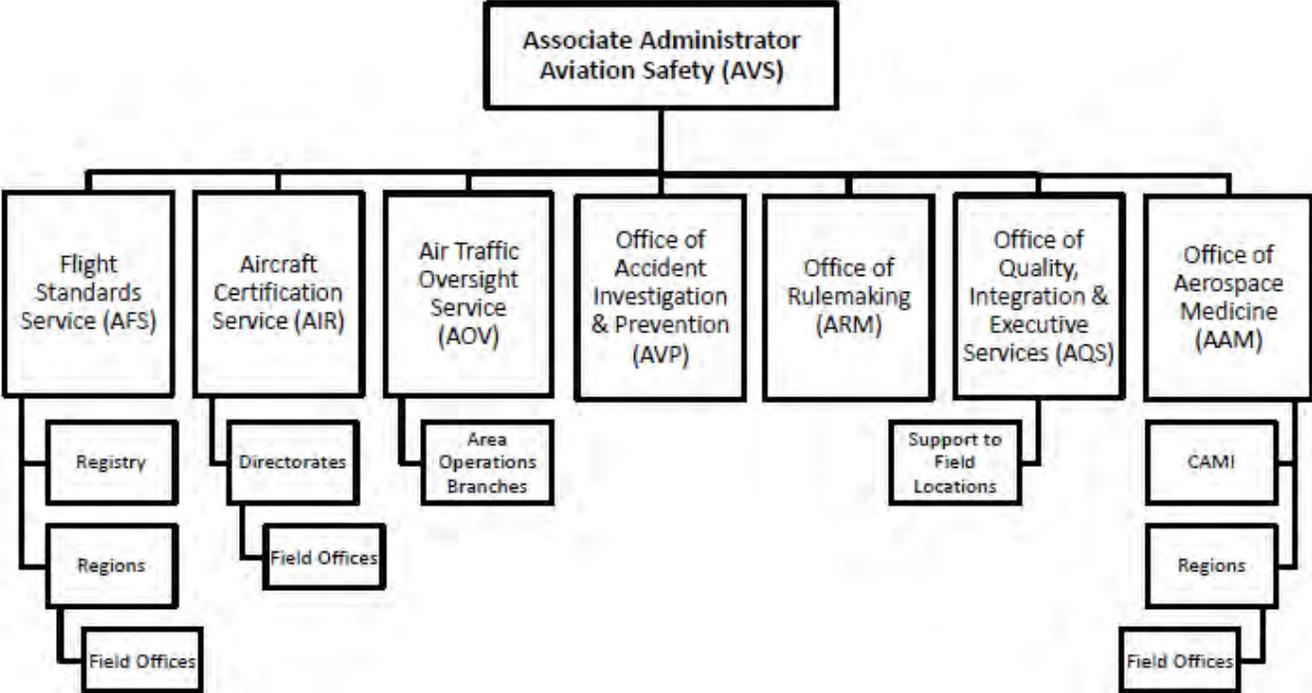
### **Funding Status**

AVS’s average and overall personnel compensation costs continue to rise primarily due to increased staffing levels, annual pay increases, negotiated labor agreements, and the increased cost of benefits, particularly healthcare. Since just over 80 percent of the AVS operations budget covers payroll and benefits, controlling these costs is critical to the long-term sustainability of operations. Although it mainly relies on attrition to manage personnel costs, AVS continues to monitor hiring and staffing compositions to ensure that pay compensation and benefit costs continue to remain under control.

AVS requires specialized training, and equipment, as well as supplies, travel, and other non-payroll funding for its employees to effectively perform the organization’s safety oversight and surveillance responsibilities. While staffing is our greatest cost, AVS’s policy is to maintain a workforce that is trained, equipped, and can travel to carry out the organization’s safety mission.

# Appendices

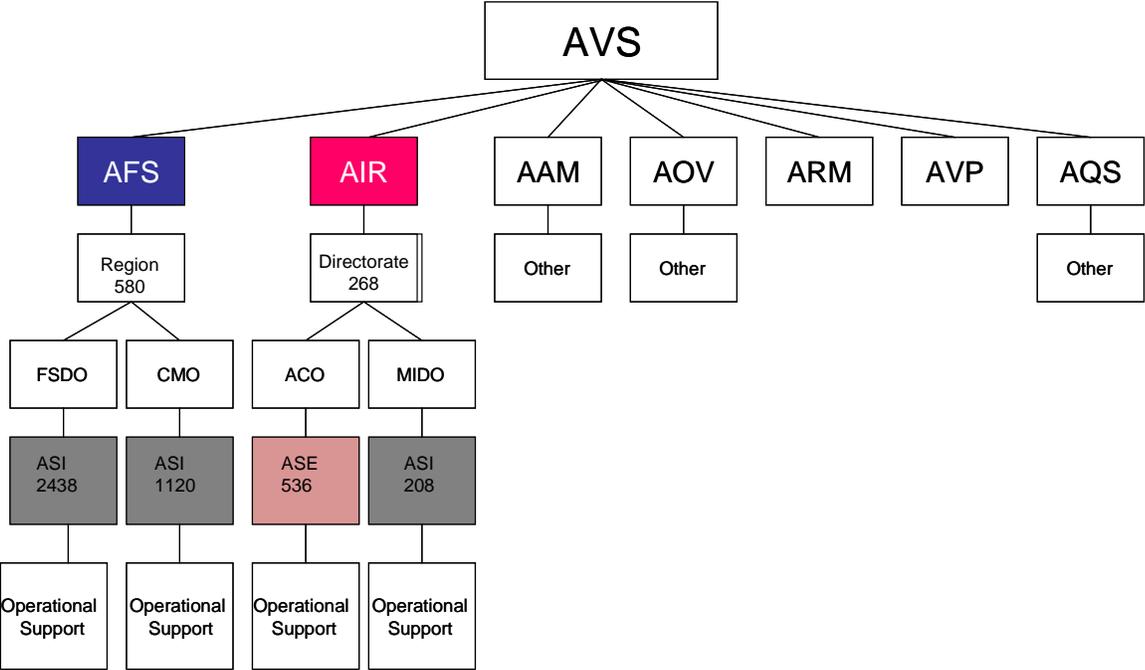
## Appendix 1: FAA Aviation Safety Organization



**Appendix 2: Aviation Safety Full-Time Employees and S/O Responsibilities**  
(Based on FY 2013 Budget Request)

|  |  |
|--|--|
| <b>Flight Standards Service</b><br>(AFS): 5,254                              | <b>Promotes:</b> <ul style="list-style-type: none"> <li>• Safety in air transportation by setting the standards for certification and oversight of airmen, air operators, air agencies, and designees.</li> <li>• Safety of flight of civil aircraft and air commerce by:           <ul style="list-style-type: none"> <li>- Accomplishing certification, inspection, surveillance, investigation and enforcement.</li> <li>- Setting regulations and standards.</li> <li>- Managing the system for registration of civil aircraft and all airmen records.</li> </ul> </li> </ul>  |
| <b>Aircraft Certification Service</b><br>(AIR): 1,319                        | <b>Develops and administers safety standards governing the design, production and airworthiness of civil aeronautical products:</b> <ul style="list-style-type: none"> <li>• Administering safety standards governing the design, production, and airworthiness of civil aeronautical products.</li> <li>• Overseeing design, production and airworthiness certification programs to ensure compliance with prescribed safety standards.</li> <li>• Selecting, appointing, and overseeing designees and delegated organizations.</li> <li>• Providing safety management system to support the continued operational safety of aircraft.</li> <li>• Working with aviation authorities, manufacturers and other stakeholders to help them successfully improve the safety of the international air transportation system.</li> </ul> |
| <b>Office of Aerospace Medicine</b><br>(AAM): 369                            | <b>Manages medical programs and services:</b> <ul style="list-style-type: none"> <li>• Medical certification of airmen.</li> <li>• Inspection and oversight of aviation industry drug and alcohol testing programs.</li> <li>• Medical clearance of air traffic control specialists.</li> <li>• Drug and alcohol testing of FAA employees with safety sensitive jobs and jobs requiring security clearances.</li> <li>• Aerospace medicine and human factors research.</li> <li>• Employee occupational health and health awareness programs.</li> <li>• Oversight of Aviation Medical Examiners</li> </ul>  |
| <b>Office of Quality, Integration &amp; Executive Services</b><br>(AQS): 277 | <b>Supports AVS's safety mission:</b> <ul style="list-style-type: none"> <li>• Approving, overseeing and facilitating integration initiatives among the AVS S/Os.</li> <li>• Overseeing the AVS quality management system.</li> <li>• Providing budget, planning and human resources support.</li> <li>• Providing IT support, including managing the AVS National Help Desk, giving real-time support to AVS employees, on-site contractors and other users.</li> </ul>   |
| <b>Air Traffic Safety Oversight Service</b><br>(AOV): 133                    | <b>Oversees the Air Traffic Organization:</b> <ul style="list-style-type: none"> <li>• Providing safety oversight of the ATO.</li> <li>• Approving the ATO SMS and monitoring the ATO for compliance with the approved SMS.</li> <li>• Reviewing and approving the ATO's safety implementation actions and risk management strategies.</li> <li>• Ensuring consistency in application of requirements:           <ul style="list-style-type: none"> <li>- Credentialing program for ATO operation personnel.</li> <li>- Safety audits of ATO operations and system processes.</li> </ul> </li> </ul>   |
| <b>Office of Accident Investigation &amp; Prevention</b><br>(AVP): 67        | <b>Investigates aviation accidents and incidents to detect unsafe conditions and trends and to coordinate the corrective action process:</b> <ul style="list-style-type: none"> <li>• Investigating major or significant accidents and incidents to identify safety deficiencies and unsafe conditions, and recommend policy.</li> <li>• Coordinating with responsible FAA office for evaluation and corrective action.</li> <li>• Analyzing accident and incident data and other safety data to identify safety issues and trends.</li> <li>• Addressing National Transportation Safety Board and internal FAA Safety Recommendations.</li> <li>• Leads SMS implementation efforts for the FAA and AVS.</li> </ul>  |
| <b>Office of Rulemaking</b><br>(ARM): 36                                     | <b>Manages the FAA's rulemaking program, processes and timelines:</b> <ul style="list-style-type: none"> <li>• Developing proposed and final rules, and managing responses to petitions for rulemaking.</li> <li>• Managing responses to petitions for exemption from regulatory requirements.</li> <li>• Overseeing rulemaking advisory committees that provide advice and recommendations on a myriad of aviation-related issues.</li> </ul>   |

**Appendix 3: ASI and ASE Functional Organizational Chart**

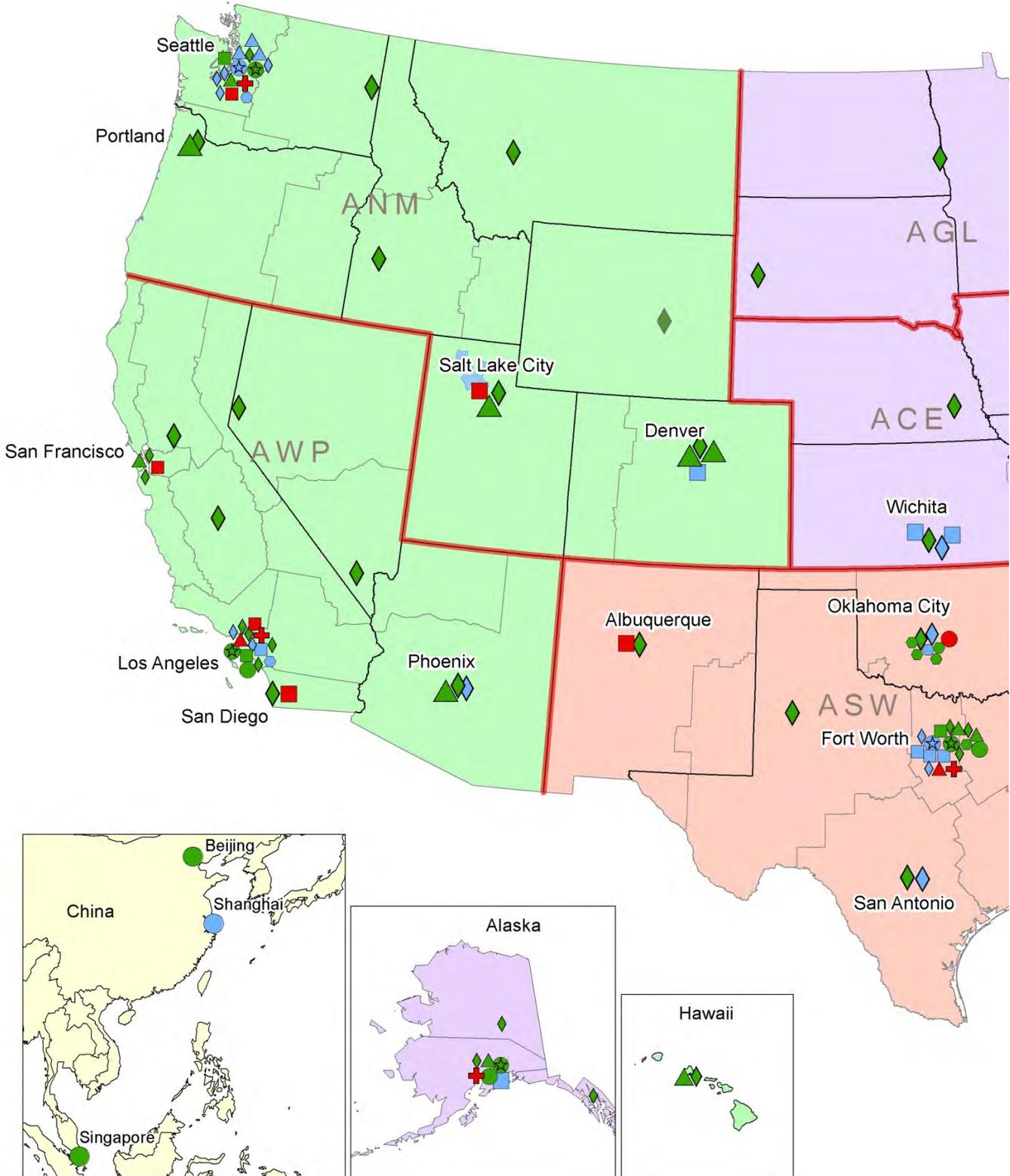


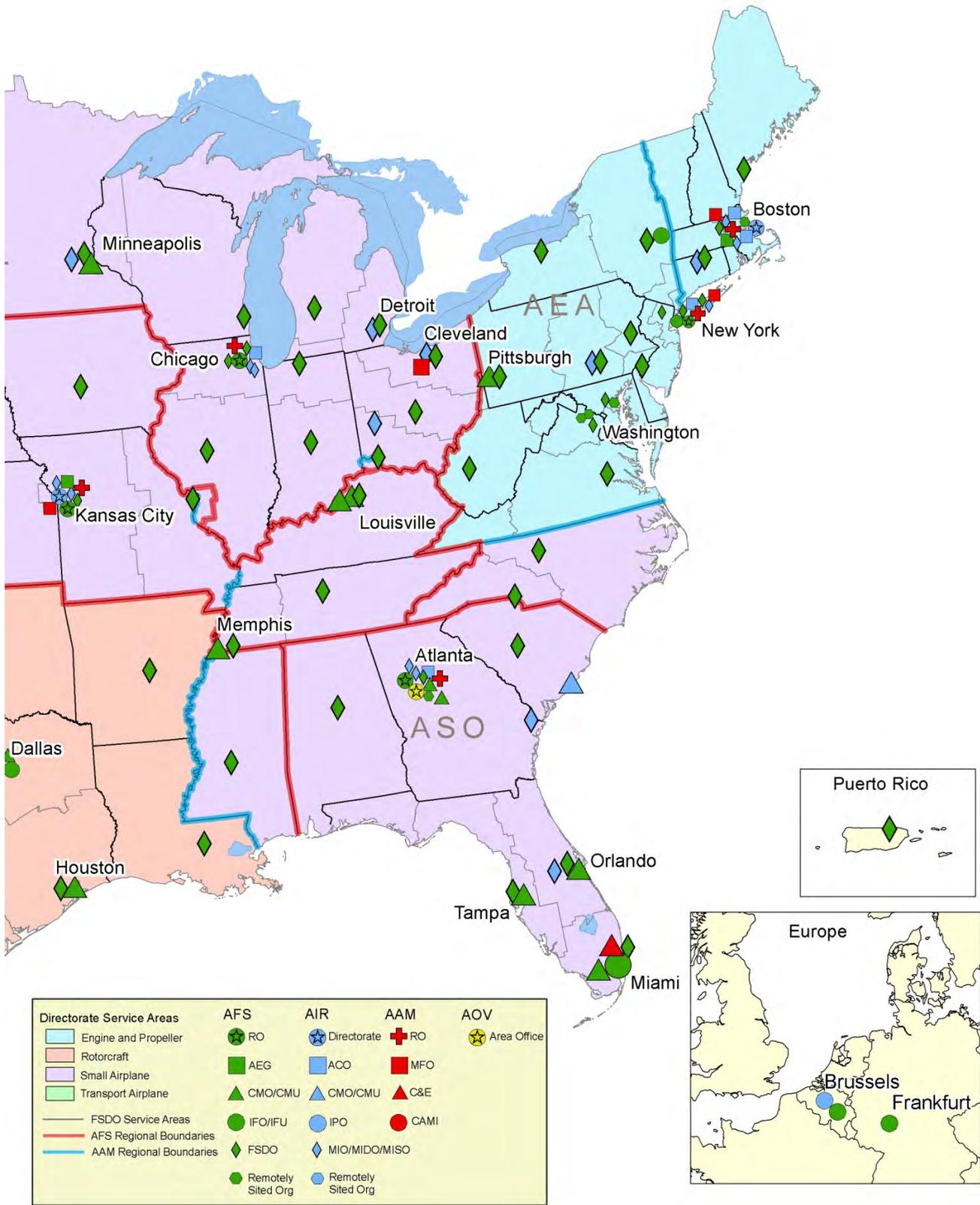
The AVS organization is staffed with over 7,450 employees. Approximately 4,400 are Aviation Safety Inspectors (ASIs) and 750 are Aerospace Engineers (ASEs) located within AFS or AIR. This is a high level chart that is intended to provide a line of sight to where ASIs and ASEs are aligned with the ASTARS model for AFS and AIR. AVS ASIs and ASEs in AFS and AIR provide oversight for designees that conduct work activities on behalf of the agency.

### Appendix 4: AVS S/O Field Functions

| <b>Service/Office</b>  | <b>Number</b> | <b>Function</b>  |
|--|---------------|--|
| <b>Flight Standards Service (AFS)</b>                                | <b>8</b>      | Regional Flight Standards Division Offices               |
|  | <b>81</b>     | <b>FSDO</b> - Flight Standards District Offices          |
|  | <b>1</b>      | <b>FSFO</b> - Flight Standards Field Office              |
|  | <b>19</b>     | <b>CMO</b> - Certificate Management Offices              |
|  | <b>2</b>      | <b>CMFO</b> - Certificate Management Field Office        |
|  | <b>6</b>      | <b>CMU</b> - Certificate Management Units                |
|  | <b>5</b>      | <b>AEG</b> - Aircraft Evaluation Group Offices           |
|  | <b>5</b>      | <b>IFO</b> - International Field Offices                 |
|  | <b>4</b>      | <b>IFU</b> - International Field Units                   |
| <b>Aircraft Certification Service (AIR)</b>                          | <b>4</b>      | Directorates   |
|  | <b>12</b>     | <b>ACO</b> - Aircraft Certification Offices              |
|  | <b>4</b>      | <b>MIO</b> - Manufacturing Inspection Offices            |
|  | <b>19</b>     | <b>MIDO</b> - Manufacturing Inspection District Offices  |
|  | <b>3</b>      | <b>MISO</b> - Manufacturing Inspection Satellite Offices |
|  | <b>1</b>      | <b>CMO</b> - Certificate Management Offices              |
|  | <b>3</b>      | <b>CMU</b> - Certificate Management Unit                 |
|  | <b>2</b>      | <b>IPO</b> - International Policy Offices                |
| <b>Office of Aerospace Medicine (AAM)</b>                            | <b>9</b>      | Regional Aerospace Medicine Divisions                    |
|  | <b>9</b>      | <b>MFO</b> – Medical Field Offices                       |
|  | <b>3</b>      | <b>C&amp;E</b> – Compliance and Enforcement Centers      |
|  | <b>1</b>      | <b>CAMI</b> – Civil Aerospace Medical Institute          |
|  | <b>2</b>      | Industry Drug and Alcohol Program (located in Regions)   |
| <b>Office of Quality, Integration &amp; Executive Services (AQS)</b> | <b>9</b>      | FAA Regional Offices                                     |
|  | <b>85</b>     | Field Locations  |
| <b>Air Traffic Safety Oversight Service (AOV)</b>                    | <b>3</b>      | Area Operations Branches                                 |

**Appendix 5: AVS US and International Locations**





## Appendix 6: Aviation Safety Primary Stakeholders

(Data updated – November 2012)

| <b>Air Operator Certificates: 5,389</b> |   | <b>Active Pilots: 744,576</b> |                         |
|---|---|-------------------------------|-------------------------|
| 85                                      | Major U.S. Air Carriers                         | 148,293                       | Airline Transport Pilot |
| 2160                                    | Commuter Air Carriers/On Demand Air Taxi        | 133,681                       | Commercial              |
| 88                                      | Commercial Operators                            | 207,742                       | Private                 |
| 467                                     | Foreign Air Carriers <sup>1</sup>               | 221                           | Recreational            |
| 327                                     | External Load (e.g. Logging, Oil Platform)      | 4,418                         | Sport                   |
| 1872                                    | Agricultural Operators                          | 121,500                       | Student                 |
| 390                                     | Public Use Authorities (e.g. State/City/Police) | 128,721                       | Foreign Pilot           |

| <b>Air Agency Certificates: 5,911</b> |                              | <b>Non-Pilot Air Personnel: 742,256</b> |  |
|---------------------------------------|------------------------------|---|--|
| 691                                   | Pilot Training Schools       | 380,543                                 | Mechanics/Repairmen  |
| 4798                                  | Repair Stations              | 38,970                                  | Control Tower Operators  |
| 170                                   | Maintenance Training Schools | 171,474                                 | Flight Attendants  |
| 252                                   | Pilot Training Centers       | 73,859                                  | Ground Instructors   |
|                                       |                              | 77,410                                  | Other (e.g. dispatchers, flight navigators, parachute riggers, flight engineers) |

| <b>Aircraft: 210,463</b> |                               |
|--------------------------|-------------------------------|
| 7,279                    | Air Carrier Aircraft          |
| 471                      | Commuter Air Carrier Aircraft |
| 10,420                   | On Demand Air Taxi Aircraft   |
| 181,782                  | General Aviation              |
| 10,511                   | Inactive Aircraft             |

| <b>ATCS Medical Clearance Exams: 14,747</b> |                                  |
|---|----------------------------------|
| 13,745                                      | Air Traffic Controller Workforce |
| 107   | Flight Service Station Workforce |

| <b>Aviation Authorities-other countries: 416</b> |  |
|--|--|
| 36   | Authorities/Entities with Bilateral Agreements |
| 192  | Foreign Civil Aviation Authorities             |
| 188  | Accident Investigation Authorities             |

| <b>ATO Designee Examiners/ATO Credential Personnel: 22,709</b> |                           |
|--|---------------------------|
| 360  | ATCS Proficiency Managers |
| 78   | ATSS Proficiency Managers |
| 1,845  | ATCS Designated Examiners |
| 460  | ATSS Designated Examiners |
| 14,944   | ATCS Credential Holders   |
| 4,771  | ATSS Credential Holders   |
| 605  | CTO Examiners             |

| <b>Check Airmen: 7,589<sup>2</sup></b> |              |
|--|--------------|
| 4393                                   | Part 121     |
| 150                                    | Part 121/135 |
| 3,046                                  | Part 135     |

| <b>Airmen Medical Examinations: 379,358</b> |                    |
|---|--------------------|
| 29,396                                      | Special Issuances  |
| 349,962                                     | Standard Issuances |

| <b>Designees: 10,239<sup>3</sup></b> |                        |
|--------------------------------------|------------------------|
| 3,447                                | Aircraft Certification |
| 3,299                                | Flight Standards       |
| 3,493                                | Aerospace Medicine     |

| <b>Aviation Industry Entities Covered by Anti Drug &amp; Alcohol Programs: 7,200</b> |  |
|--|--|
|--|--|

| <b>Flight Instructors: 98,294</b> |  |
|-----------------------------------|--|
|-----------------------------------|--|

| <b>Aviation Industry Trade Organizations</b> |  |
|--|--|
|--|--|

| <b>Mechanics with Inspection Authority: 22,292</b> |  |
|--|--|
|--|--|

| <b>National Transportation Safety Board</b> |   |
|---|---|
| 96  | Safety Recommendations (5-year average) |
| 32  | Major Investigations (avg/yr) (new)     |

| <b>Approved Manufacturers: 1,619</b> |  |
|--------------------------------------|--|
|--------------------------------------|--|

<sup>1</sup> The FAA does not issue Certificates to Foreign Air Carriers. They are only issued Operations Specifications

<sup>2</sup> Part 121 14 CFR Part121 Operating Requirements: Domestic, Flag, and Supplemental Operations

Part 135 14 CFR Part135 Operating Requirements: Commuter and On Demand Operations and Rules Governing Persons On Board Such Aircraft

<sup>3</sup> Designee numbers were recently revalidated by the Designee project manager.