Performance

Federal Aviation Administration

PERFORMANCE REPORT FY 2005

Aircraft Certification Service
AIR

AIRCRAFT CERTIFICATION SERVICE
FEDERAL AVIATION ADMINISTRATION
WASHINGTON, D.C. 20591

To our employees and customers:

Results matter. As the leader of this customer focused and results oriented organization, I am particularly gratified each year when I report to you on the performance and noteworthy deeds of our dedicated Aircraft Certification Service (AIR) force of more than 1,100 aviation safety professionals. FY 2005 was a successful year for us. Despite a difficult budget situation that reduced staff and resources, we met the high expectations others have of us, and that we have of ourselves.

With our safety accomplishments of FY 2005, we begin to harvest the fruits of our evolving safety culture. We increasingly rely on data, and manage by facts. We are making analysis and evaluation a priority. We are finding efficiencies by standardizing the way we do things. We are improving the clarity and conciseness of policy and requirements. We continue to strengthen our ability to use metrics and tools to gauge our effectiveness and guide our judgments. And, importantly, we have made quality an integral part of our business.

As we model our safety and quality behavior, every day we see it reflected in the safety cultures of our customers and partners. Aviation safety is indeed a system of systems, each building upon the safety advances of others, developing synergy. Interlocking and interdependent. We achieve synergy when we reach out to strengthen our partnerships: integrating AIR with the Flight Standards Service and other Federal Aviation Administration organizations; expanding organizational delegation efforts with our customers; and advancing data sharing and data analysis techniques with industry and other aviation entities.

The size and complexity of the aviation system is increasing at a tremendous rate. The system of the future will see more aircraft, flying more miles, operated by more new carriers using new and different aircraft types. The safety culture changes we put into effect now will position us to meet the challenges.

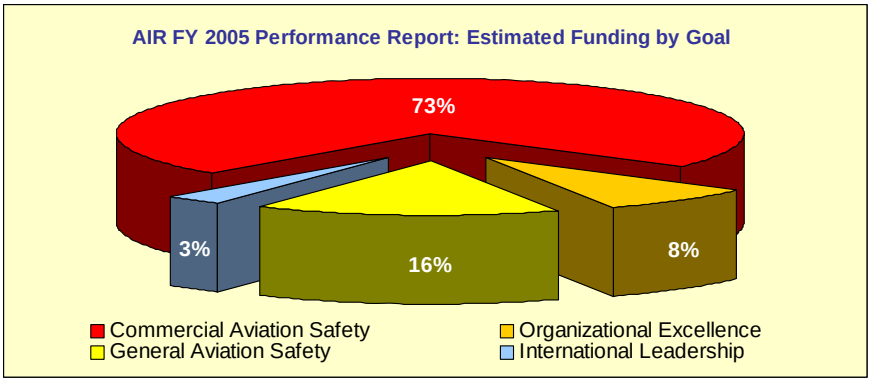
I'm pleased to report that we have many proud accomplishments in FY 2005. I'm confident that we will realize many more together in the coming years.

John J. Hickey
Director
Aircraft Certification Service

Annual Performance Report
AIR Spotlight on Safety

Safety first. We are a safety organization. We devoted about 90% of our resources in FY 2005 directly to improving Commercial and General Aviation Safety. Plus, our investment in International Leadership and Organizational Excellence also contributes indirectly to our safety mission. During FY 2005, AIR programs and individuals contributed to the accomplishment of the following performance highlights:

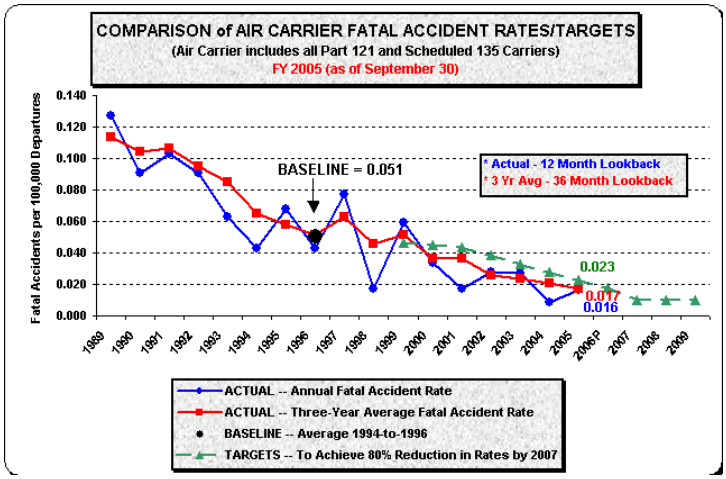
- Submitted the Notice of Proposed Rulemaking (NPRM) to Office of the Secretary of Transportation requiring reduction in fuel tank flammability exposure on transport airplanes, which, when implemented, will drastically reduce the risk for fuel tank explosions.
- Helped establish the Joint Planning and Development Office (JPDO) Safety Integrated Product Team to support the Next Generation Air Traffic System (NGATS) plan.
- Completed Safety Management Program Phase I and initiated Phase II, which finalized the AIR Safety Management Master Plan.
- Completed second year objectives of Boeing 787 certification consistent with Certification Process Improvement (CPI) principles.
- Completed all FY objectives for the FAA validation of the Airbus A380.
- Issued a supplemental type certificate (STC) on Automatic Dependent Surveillance (ADS) Satellite data link equipment to General Dynamics.
- Issued the Organizational Designation Authorization (ODA) rule enhancing FAA delegation to organizations.
- Completed the jointly developed FY 2005 Delegation Option Authorization (DOA) milestones with Boeing.
- Issued the first experimental airworthiness certificate for an unmanned aircraft to General Atomics.
- Prototyped a database of human factors research and literature linked to regulations, supporting human factors evaluation of flight deck displays, controls, and systems.
- Issued more than 400 airworthiness directives to correct potential unsafe conditions.
- Completed more than 900 Aircraft Certification Systems Evaluation (ACSEP), Principal Inspector, and supplier safety audits, affirming the health of the production approval holders system to produce safe aircraft.
- Implemented a quality management system, setting the stage for follow-on implementation of our safety management system.



COMMERCIAL AVIATION SAFETY

Aviation safety is the Service's primary mission. We devoted the largest share of this organization's resources and program activity (73%) to improving Commercial Aviation Safety, consistent with our Vision 100 reauthorization. We estimate that the work of some 850 of our employees contributed to the commercial aviation safety mission in FY 2005. AIR supports commercial aviation safety by publishing safety regulations and policy; certifying type design, production, and airworthiness; and maintaining oversight for continuous operational safety. AIR helps set the standard for global aviation safety by overseeing the safety of the world's largest, most complex aviation system.

AIR inspectors, engineers, test pilots, and other critical safety staff provide safety regulations, certification standards, and continuous safety oversight for products manufacturers, designees, and delegated organizations. We promote aviation safety by working with aviation authorities, manufacturers, and other stakeholders to help them improve safety in domestic and international air transportation. We issue certificates and policy, and we oversee certificate holders' fulfillment of their responsibilities to meet safety standards. The standards maintained by our employees provide the basic framework for maintaining and improving aviation safety. AIR's commercial aviation safety accomplishments in FY 2005 have contributed to historic lows in commercial aviation fatal accident rates and achievement of FAA's safety performance targets.



This year, commercial aviation transportation returned to pre-2001 tempo. With an average annual growth rate of 3.4 percent expected over the next 12 years, by 2015 the number of passengers will top one billion. Manufacturing of aircraft and parts is also on the increase. Some 2,963 airplanes shipped in 2004, a 10.3 percent increase above 2003.

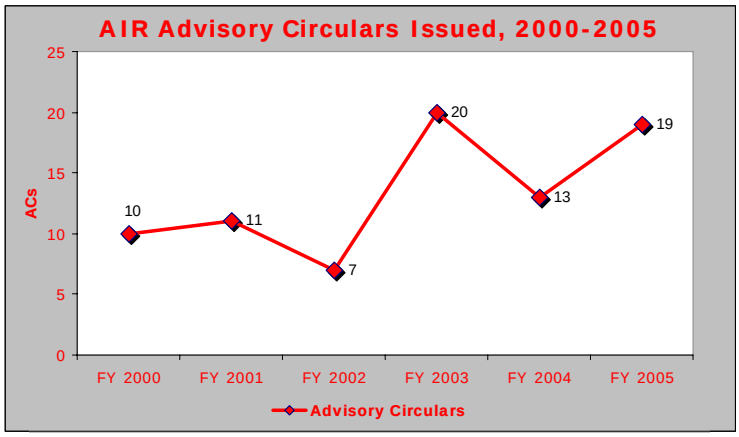
2005 Program Highlights

***Rulemaking*:** During FY 2005, priority rulemaking accomplishments included AIR's submission of the Notice of Proposed Rulemaking (NPRM) on fuel tank flammability to OST, preliminary team concurrence for Autoflight Systems Final Rule for 14 CFR 25§.1329 and accompanying advisory circular (AC), and issuance of the Organizational Designation Authorization (ODA) final rule. The fuel tank NPRM requires incorporating ways to reduce fuel tank flammability on retrofit and new production high flammability exposure fuel tanks. It also requires reducing flammability on new fuel tank designs. We revised the Autoflight Systems advisory circular to address improvements in technology and capability of flight guidance systems and vulnerabilities of today's flight guidance systems that have contributed to accidents and incidents in the last two decades. The ODA rule expands FAA delegation to organizations, reaching beyond existing Designated Alteration Station (DAS), DOA, Special Federal Aviation Regulation (SFAR) 36 and Organizational Delegated Airworthiness Representative (ODAR) programs. In other FY 2005 rulemaking and regulatory advances, AIR:

- Issued the Enhanced Airworthiness Program for Airplane Systems (EAPAS) NPRM.

- Developed draft Title 14 CFR part 21 NPRM language incorporating changes in manufacturing and the aviation environment since the original language was drafted.
- Published the 14 CFR 21§.183(d) NPRM, the first step in preventing individuals from building aircraft from spare and surplus parts without the type certificate holder's permission.

***Advisory Circulars*:** During FY 2005, AIR dispositioned public comments on a draft AC about Part 33 Turbine Engine Repair. The draft AC standardizes repairs of critical turbine engine parts to maintain and enhance safety. In all, AIR issued 19 ACs in FY 2005, an increase from 13 ACs issued in FY 2004. Other ACs AIR advanced in FY 2005 include (total includes commercial and general aviation ACs):



- Issued AC 20-152, Design Assurance Guidance for Airborne Electronic Hardware.
- Issued AC 20-149, Safety and Interoperability Requirements for Flight Information Service Broadcast.
- Completed AC 20-67B, Very High Frequency (VHF) Installation Requirements.
- Drafted AC 20-DLK, Recording of Data Communication in Crash Survivable Memory.
- Drafted AC 20-140, Revision A, Guidelines for Installation of Data Communication Equipment.
- Drafted AC 20-VDL3, Guidelines for Design and Operational Approval of Aircraft Equipment with VDL Mode 3.
- Drafted AC for Required Communication Performance.

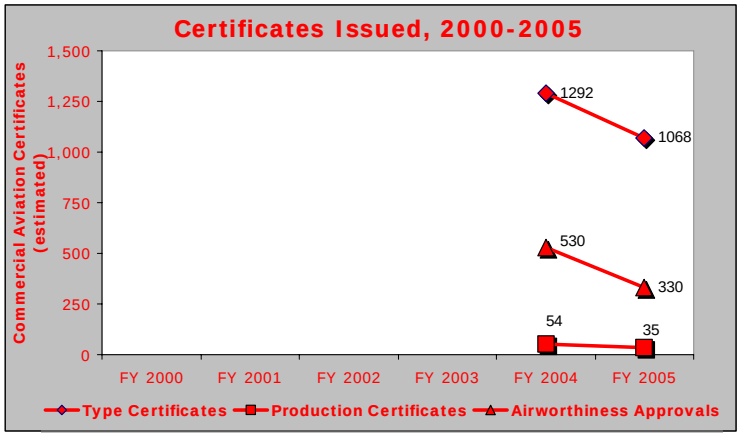
***Orders and Guidance*:** AIR orders and policy guidance in FY 2005 included important advances in defining minimum performance standards (MPS) for next generation weather radar with enhanced turbulence detection capability (technical standard order, TSO-C63c). Updating the governing TSOs will help industry incorporate airborne weather radar with forward-looking turbulence detection into new aircraft (the A380 and B787) and legacy aircraft. TSOs provide a standard way to demonstrate compliance through TSO and type certification processes and support agency safety initiatives to reduce turbulence incidents and accidents. We also issued policy in FY 2005 allowing component test methods instead of full-scale dynamic seat tests to close out part 4 of the seat streamlining effort. The seat streamlining policy on replacement restraint systems and seat cushions will reduce the costs and time of certifying seats to part 25 dynamic test requirements.

In addition, AIR completed eight policy compliance audits to ascertain directorate compliance to established national policy and to assess the effectiveness of the policy used in a functional environment. Other AIR FY 2005 commercial aviation safety policy and guidance included:

- Completed standards and policy for Area Navigation (RNAV) operations (AC 90-100).
- Completed guidance on aircraft qualification for Required Navigation Performance (RNP) approach operations.

- Completed policy for FAA recognition of company procedures and practices for handling navigation data in support of RNP and RNAV (AC 20-153).
- Published Order 8110.54, Instructions for Continued Airworthiness.
- Published Order 8110.42B, Parts Manufacturer Approval Procedures.
- Issued TSO-C139, Air Communication Equipment.
- Issued TSO-155, Recorder Independent Power Supply.
- Updated and issued TSO-C10a, Altimeter, Pressure Actuated, Sensitive Type.
- Updated and issued TSO-C37e, VHF Radio Communications Transmitting Equipment Operating within Radio Frequency Range 117.975 to 137.000 Megahertz.
- Updated and issued TSO-C54c, Stall Warning System.
- Revised TSO-C59A Selective Calling (SELCAL) Equipment.
- Revised TSO C123a for CVR to include data link recording and image recording.
- Established a team to implement the concept of Required Communication Performance (RCP).
- Completed a draft Notice on Non-TSO Functions.

***Type Design, Production, and Airworthiness Certification*:** Priority AIR certification accomplishments in FY 2005 included prototyping of a new human factors certification job aid; studies investigating Traffic Alert and Collision Avoidance System (TCAS II); advances in certification of Boeing 787 and validation of Airbus A380; and entry into Partnership for Safety Programs (PSPs) with new commercial aviation customers. Among many certification highlights in FY 2005, AIR prototyped a job aid compiling human factors research and literature linked to regulations, to support human factors evaluation of flight deck displays, controls and systems; and began training field Aviation Safety Engineers in the new capability. AIR also released two interim reports (Assessment and Recommendations on Visual Alerts and Aural Annunciations for TCAS II Resolution Advisories, and Safety Study of TCAS II, Version 7.0 Logic Resolution Advisory Sense Reversal) for TCAS II Resolution Advisories (RAs).



AIR completed second-year objectives of Boeing 787 certification consistent with CPI principles. AIR's 787 team reviewed all design related certification plans and requirements helping Boeing to complete firm configuration in June 2005. This was achieved much earlier than previous programs, preventing costly changes for Boeing heading toward the end of the program in 2008. The certification basis is also on track to be finalized by the end of the year, two and a half years before certification. AIR also completed FY 2005 objectives for FAA validation of the Airbus A380 airplane, closing 15 issue papers, issuing 25 proposed special conditions, and granting one exemption.

FY 2005 also saw AIR enter into new PSPs with JAMCO,

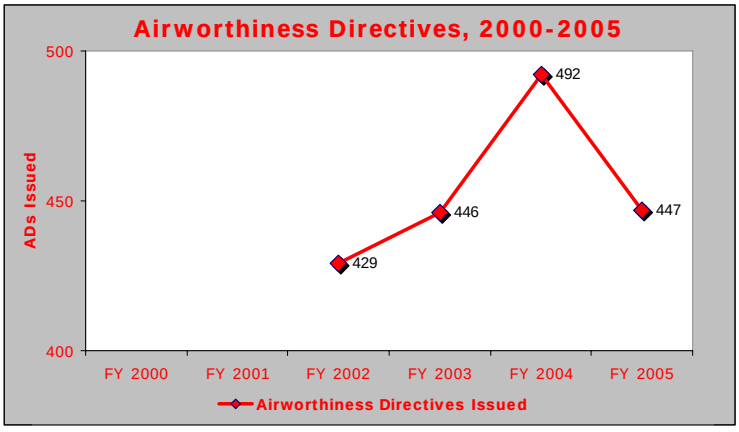
Holingsead, and Honeywell Phoenix, achieving our target. PSPs include participation from FAA stakeholders who rely on our activities for follow on type certification. PSPs promote better understanding of our process and allow stakeholders to better allocate their resources and focus on the safety critical aspects of type certification. Other FY 2005 certification accomplishments:

- Evaluated and accepted aircraft compliance and limitations for the first public RNP approach (Washington Reagan National Airport).
- Evaluated and accepted four special RNP approach procedures.
- Evaluated and accepted first RNP Parallel Approach Transition Approach Procedure.
- Evaluated and accepted two vendors compliance to navigation data processes.
- Briefed the GAO on type certification in response to their audit on Airbus A380 impact on the National Airspace System.
- Updated and prototyped FAA-European authority type validation principles training to reflect the new European regulatory system.
- Prototyped the airframe engineering job functions training course.

***Delegation/Designee Management*:** In FY 2005, by completing the delegation option authorization (DOA), Boeing Commercial Airplanes became the biggest company to participate in our designee program. We think it is the most significant milestone in the history of our delegation system. Boeing is the first transport airplane manufacturer to become an FAA designee. They assumed responsibility for appointing and overseeing FAA representatives who will check their company's compliance with airworthiness regulations and inspect products to make sure they conform to standards. In addition, Boeing can assume certification project management responsibilities. This arrangement enables us to get the most out of our limited resources and budget. The Boeing authority is expected to be a model for future delegation systems. The first Puget Sound airplane delivered under the delegation authority was a Boeing 737-900. Other FY 2005 delegation advances:

- Developed the certified design organization (CDO) program plan, consistent with the Vision 100 Reauthorization Act.
- Drafted a designee risk management model for data-based resource allocation.
- Helped write the AVS response to the GAO audit report on designee program management - "Aviation Safety: FAA Needs to Improve the Management of Its Designee Programs," GAO-05-40, October 2004." We agreed that the program could benefit from regular review and evaluation.

***Airworthiness Directives*:** All AIR directorates use a risk assessment process to address unsafe conditions are addressed quickly and speedily issues airworthiness directives (ADs). AIR issued 447 ADs in FY 2005. In some sense, the downward trend in ADs can be a positive indicator for overall aviation safety. As they represent and address identified safety vulnerabilities, no target is set for ADs.



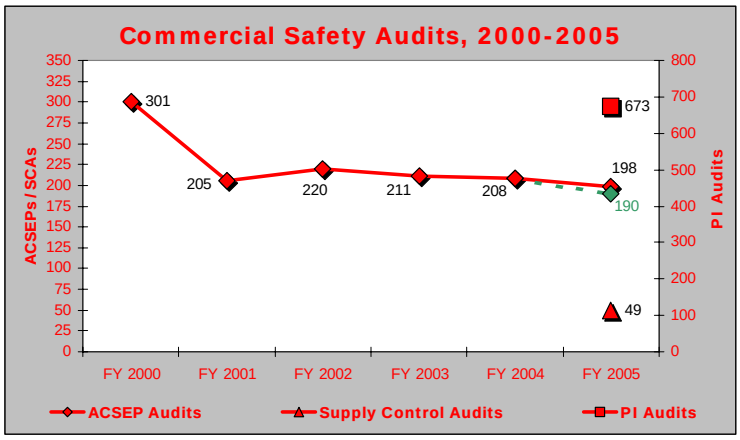
***Cooperation with other U.S. Government Agencies*:** During FY 2005, AIR gave technical support to the Department of Homeland Security's Counter Man Portable Air Defense System (MANPADS) Special Office and the Flight Recorder Study Group (FRSG) on rulemaking activities. We also supported the NASA Stratospheric Observatory for Infrared Astronomy

(SOFIA) L-3 Com/Integrated Systems project. We issued about 450 Request for Conformities (RFC's) for parts and assemblies, including burn tests, in connection with this effort. The Flight Standards District Office (FSDO) issued a one-time approval of burn testing for all insulation.

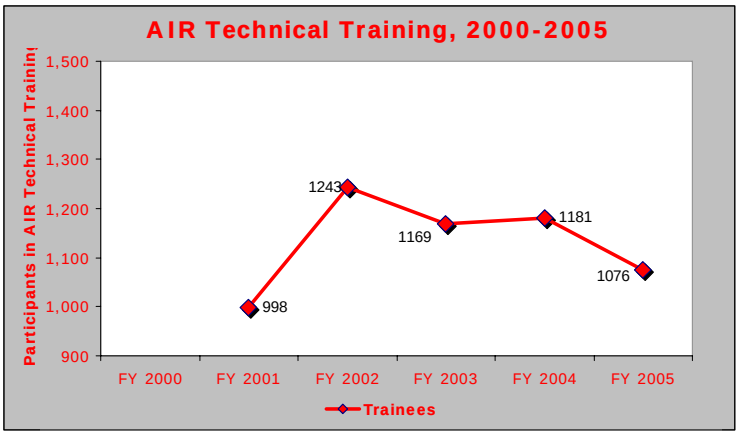
***External Safety Partners and Outreach*:** AIR continues to respond to recommendations from our safety partners. At the beginning of 2005, we had 149 open National Transportation Safety Board (NTSB) safety recommendations. During 2005, we closed 11, but received 17 new ones. So we ended 2005 with 155 open recommendations, an increase of 6 recommendations over last year. We also prepared the AVS response to the GAO audit report on ensuring better coordination when approving air traffic control systems.

***Safety Oversight/Certificate Management*:** AIR completed 189 Aircraft Certification Systems Evaluation Program (ACSEP) safety audits of commercial aviation production approval holders (PAHs) and 9 ACSEPs at delegated facilities. ACSEP is an element of certificate management. We completed 198 ACSEP audits, achieving our target. ACSEPs identified 452 non-compliances at PAH facilities, including an immediate safety concern for failure to report 14 CFR 21§.3 occurrences. ACSEP recorded 29 non-compliances at delegated facilities. The reduced number of ACSEP evaluations from FY 2000-2005 (see graph below) reflects improved resource targeting, by transitioning Category 3 part manufacturers from ACSEP audits to PI audits, resulting in more PI audits. AIR conducted 49 supplier control audits (SCAs) and 673 principal inspector element audits in FY 2005.

Evaluation helps ensure PAHs comply with requirements and identifies national trends that may require new or revised regulations, policy, and guidance. Lessons learned and customer feedback reports provide ways to analyze results related to continued operational safety where FAA intervention may be required. Without standardized evaluations, PAH's Title 14 CFR safety requirements may not be met. Some other FY 2005 oversight advances include:



- Worked in collaboration with industry to develop an inspection program to detect and correct unauthorized maintenance practices that could cause scribe marks resulting in structural failures of transport category airplanes.
- Completed memoranda of understanding (MOU) with Seal Dynamic and AAR to streamline the parts manufacturer approval (PMA) process.
- Revised the ACSEP and 14 CFR part 21 courses, holding successful prototype classes.
- Piloted 2 new on-the-job (OJT) lessons for AIR inspectors.



***Technical Training*:** AIR's technical training contributes to expanding employee capabilities and readiness to carry out programs and operations effectively. During the GAO audit of technical training, we were able to articulate this organization's training management best practices, including training lifecycle management. The GAO recognized that "FAA follows many of the effective management practices we have outlined in our guide for assessing training and development effort." During FY 2005, a total of 1,076 students were successfully trained in AIR-sponsored classroom and web-based courses offered at the FAA Academy. Among these were 561 FAA employees, 453 industry representatives, and 62 international participants. The most important technical training advances in FY 2005 involved our efforts to expand distance learning opportunities and offerings. Other FY 2005 technical training advances included:

- Completed the first training needs assessment to identify the Leadership and Business Management skills needed to support Safety Management principles and processes. This project resulted in a report with findings and recommendations; creation of an impact map mapping identified training skills/objectives to strategic goals; and a schematic model to address the Leadership and Business Management training needs through the AIR Technical Training Program.
- Managed the structured on-the-job (OTJ) curriculum, adding two new courses for inspectors.
- Prototyped training for the FAA-EASA type validation procedures.

Government Accountability Office

FAA has put in place thoughtful, structured processes for:

-linking training to strategic goals

-identifying and developing courses

-supporting technical training

-ensuring inspectors receive technical training

-obtaining inspectors' and supervisors' views

***Safety Data and Systems*:** AIR's safety vision is to develop and promote data-driven, risk-based, and innovative programs to achieve safety improvements in the nation's aviation system. Increasingly, the Service will use information to shift our focus from responding to incidents to identifying accident precursors and preventing safety incidents. In FY 2005, AIR and Flight Standards Service developed an agreement allowing the FOQA/ASAP Aviation Rulemaking Committee and the Certification Authorities Software Team (CAST) to determine and mitigate emerging threats, changing risks, and precursors using data and prioritization criteria. Among other FY 2005 safety information advances, we:

- Conducted Starlight prototype to demonstrate prognostic data analysis capability and presented results at the AIR Leadership Conference.
- Presented a plan for transitioning CAST from a forensic to prognostic analysis approach.

Commercial Aviation Safety Management Challenges

Rulemaking

- NPRM and Federal Register reviews can be very long, causing delays to rulemaking schedules. Written guidance for document style and format expectations could reduce risk to rulemaking schedules.
- Rulemaking schedule milestones can be overly optimistic, especially for controversial rulemaking projects. A revised standard rulemaking schedule, reflecting more realistic process expectations, could reduce the risk to rulemaking milestones.

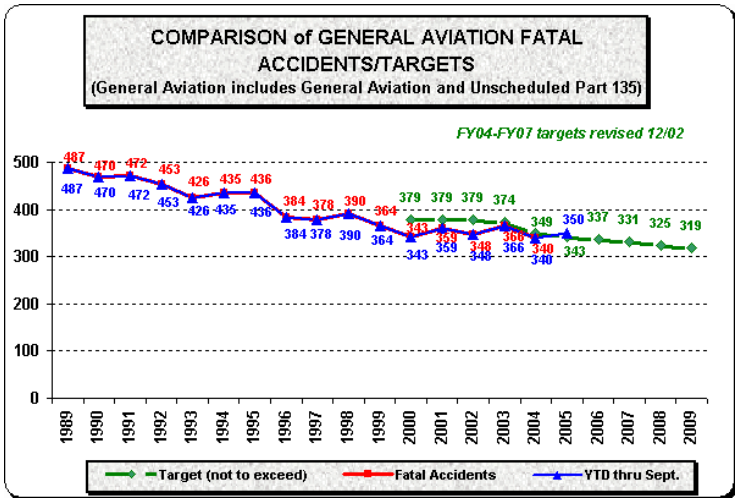
Repair Station Oversight

- Aircraft feature increasingly sophisticated electronic systems and new designs, putting pressure on repair stations to keep up with changing technology. In addition, air carriers are increasingly outsourcing maintenance to repair stations. AIR and AVS are confronted with the challenge of maintaining oversight of this more complex system.

GENERAL AVIATION SAFETY

Improving safety in general aviation (GA) is a challenge throughout the United States, and particularly in Alaska where many depend upon general aviation for transportation and delivery of goods. The U.S. general aviation fleet encompasses over 200,000 aircraft. It is a growing and diverse community, including aircraft for personal, business, corporate, public, agricultural, government, and instructional use. The fleet includes fixed-wing aircraft, rotorcraft, light sport aircraft, amateur-built aircraft, and emerging unmanned aircraft systems (UAS). FY 2005 saw us issue the first UAS experimental airworthiness certificate. Supporting all of these aircraft are thousands of manufacturers, modifiers, and maintenance bases.

FY 2005 was a challenging year because both GA aircraft sales and operations boomed. Growing demand for new products requires us to deliver new standards and guidance to the industry as they field new safety enhancing aircraft designs and equipment. In addition, aging aircraft issues challenge GA safety. To cope with general aviation safety issues, AIR cooperates closely with industry, associations, and the GA community. As with commercial aviation safety, AIR's general aviation safety program authority extends to publishing safety regulations and policy; certifying aircraft type design, production, and airworthiness, and maintaining oversight for continued operational safety. In 2005, we devoted 16% of our budget resources to improving GA and rotorcraft safety. AIR works closely with the GA Joint Steering Committee (JSC), because we see this as key to improving GA safety. The GA JSC examines general aviation accident rates and recommends intervention strategies through various working groups.



2005 Program Highlights

***Rulemaking*:** By way of Order 1110.135, AIR established the 14 CFR part 135/125 Aviation Rulemaking Committee (ARC) for small jets in FY 2005. The ARC reviewed the applicability of 14 CFR part 23 normal and commuter category rules to these small jets for future rulemaking, recommending modifications to 41 existing part 23 rules and adding 2 new rules.

***Advisory Circulars*:** During FY 2005, AIR issued AC 23-1523 on Minimum Flight Crew for part 23 Airplanes. 14 CFR 23§.1523 prescribes certification requirements for minimum flight crew on part 23 airplanes. New and novel technology has been finding its way into general aviation cockpits. Much of this technology affects crew workload and training. The new AC helps determine crew workload and error potential in complex, integrated cockpits. Advancing other ACs in FY 2005 to support general aviation safety, we:

- Drafted a combined AIR/AFS AC, Guidelines for Design and Operational Approval of Aircraft with Flight Information Service Broadcast Equipment.
- Completed AC 23-22, Guidance for Approved Model List (AML) Supplemental Type Certificate (STC) Approval of Part 23 Airplane Avionics Installations.
- Completed and posted revisions to AC 27-1B, Helicopter Terrain Awareness and Warning Systems (HTAWS).

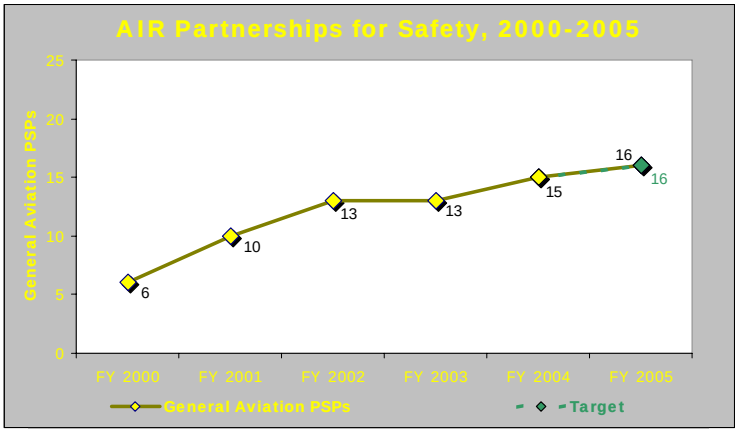
- Revised AC 29-2C, Composite Materials, guiding other airworthiness authorities and applicants toward certification of new technologies that can improve rotorcraft safety.

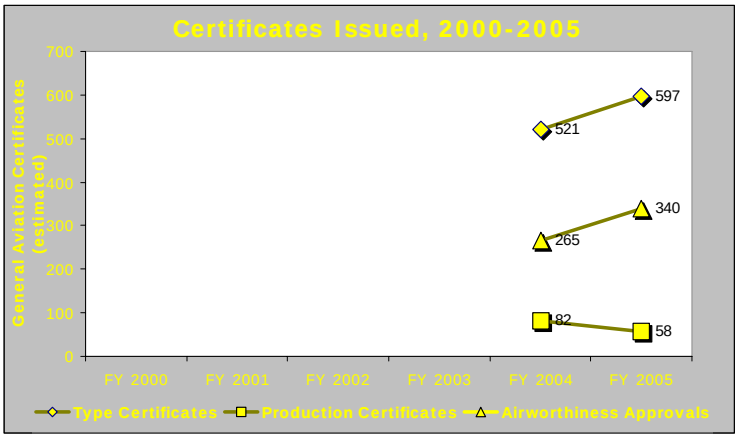
***Orders and Guidance*:** AIR issued two important policy documents in FY 2005. First was a policy statement on Bonded Joint Composite Structures, covering (1) material and process qualification and control, (2) design development and structural substantiation, (3) manufacturing implementation, and (4) maintenance implementation. Structural bonding has applications for both manufacturing and maintenance (repair) operations. We also drafted an AC on certification of synthetic vision and pathway depictions on the primary flight display for part 23 airplanes. That draft is currently open for public comment. The origins of synthetic vision are from Safer Skies (industry and FAA) calls for reduced pilot mental workload during approach and other high task operations. Synthetic vision can reduce fatal Instrument Meteorological Conditions (IMC), night, and low-visibility accidents. Other AIR FY 2005 general aviation safety policy and guidance included:

- Published Order 8110.54, Instructions for Continued Airworthiness.
- Issued Requests For Proposals (RFP) to supply research to validate and/or recommend changes in applying Health and Usage Monitoring System (HUMS) advisory guidance.
- Offered for comments a special condition for installation of a Roger Hoh supplemental type certificate (STC) Autopilot Stabilization Augmentation System (SAS) for Robinson R-44 helicopter.

***Type Design, Production, and Airworthiness Certification*:** In FY 2005, we issued a supplemental type certificate (STC) on Automatic Dependent Surveillance (ADS) Satellite data link equipment. We published a summary document on best practices to assist STC applicants, FSDO Inspectors, and inspection authorization mechanics in determining compatibility of new modifications to existing product configurations. The ADS STC supports Capstone and Safe Flight 21 programs, and will enable Capstone to continue investigating the usability of satellite technology for ADS. Satellite technology could reduce the number of ground stations required to support ADS-B, resulting in reduced overall lifecycle costs for ADS-B deployment. The best practices document will be used to help ACO engineers, AFS Inspectors, and STC applicants in determining compatibility of (non-OEM) design changes (STCs and alterations) to existing product configurations. It includes current best practices used by various FAA offices and known process gaps in the various approval processes. While we don't intend this document to represent or establish policy, it's a compilation of ideas, guidance, and strategies that have proved successful over the years.

FY 2005 also saw AIR enter into a Partnership for Safety Program (PSP) with Garmin Olathe, achieving our target. The PSP addresses our joint understanding of expectations for timely and efficient issuance of design data, manufacturing and installation approvals; clearly defined and understood roles and responsibilities for all shareholders; agreed upon approaches to identify and resolve certification basis, potential safety issues, and business practice requirements; and featuring optimal delegation using safety management concepts with appropriate controls and oversight.





In addition, AIR also deployed the Continued Operational Safety (COS) program for rotorcraft to four Aircraft Certification Offices (ACO) managing rotorcraft type certificates in FY 2005. The training provides the most current directorate guidance on rotorcraft safety, including how to apply risk management oversight methods throughout the product life cycle while maintaining standards and performing certification COS functions. Other FY 2005 general aviation certification highlights include:

- Issued the first experimental airworthiness certificate for an unmanned aircraft to General Atomics.
- Issued the type certificate for Adam A500.
- Issued the type certificate for the Agusta/Bell model AB139.
- Issued the type certificate for Diamond DA-42.
- Issued type certificates for Williams International FJ44-3A and F33-4A-15 turbofan engines.
- Issued the type certificate for Duo Discus T Glider.
- Issued an amended type certificate for Diamond DA 40F.
- Participated with the General Aviation Manufacturers Association (GAMA) on the Rapid Action Team for Process, Accountability, Communication, and Teamwork (RATPACT).
- Issued the last type inspection authorization (TIA) for Sino Swearingen Aircraft Corporation (SSAC) SJ30-2, and working toward type and production certification.
- Issued an amended type certificate for the Bell 210.
- Issued six major STC's that completely updated the cockpit and autopilot of the Erickson Air-Crane S-64F.
- Issued a special airworthiness certificate for Bell/Agusta Aerospace for the BA609 Tiltrotor.
- Worked collaboratively with two light sport aircraft (LSA) manufacturing companies, Legend Aircraft Company and Indus Aviation, to certify their aircraft under the newly established rules for the production and certification of LSA.
- Developed and distributed a night vision imaging systems (NVIS) evaluation checklist for standardized assessment of cockpits converted to be compatible for NVIS, benefiting the emergency medical response industry.
- Guided Eclipse through the certification process for a new engine fire suppressant.

***Delegation/Designee Management*:** In FY 2005, AIR completed detailed design requirements and architecture and Phase II program plan for the Safety Management Master Plan, including designee risk management requirements and development. In addition, AIR and Bell Helicopter Textron, Inc. sought an exemption to 14 CFR 21§.231 to allow a rotorcraft manufacturer to be eligible for a delegated option authorization (DOA). The DOA, reducing pressure on FAA resources, expedites certification of aircraft. In other FY 2005 general aviation delegation advances, AIR:

- Issued one of the first "light sport" Designated Airworthiness Representative (DAR) authorizations.
- Approved a Mitsubishi Heavy Industries of America organizational designated airworthiness representative (ODAR) Authorized Representative (AR) located in Japan.

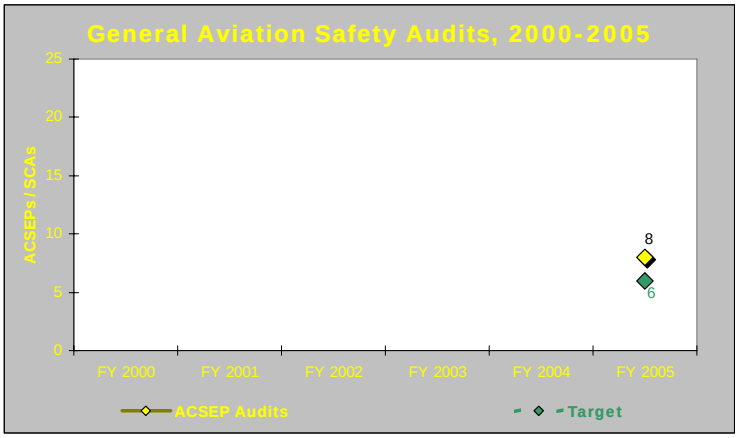
***Cooperation with other U.S. Government Agencies*:** During FY 2005, AIR offices and our Military Certification Office (MCO) worked closely with the Flight Standards Service and MCO to support the Department of Homeland Security. AIR helped establish and staff the MCO, which manages Civil Derivative Aircraft (CDA) projects. In FY 2005, we also helped NASA Dryden Flight Research Center in the development of a flight test safety database through the effective cross-utilization of information and resources. Participating in the AVS Emergency Medical Service (EMS) Task Force, we provided accident data analysis.

***External Safety Partners and Outreach*:** AIR was very active in helicopter community safety outreach in FY 2005, including participating in meetings with Helicopter Association International (HAI), Gulf of Mexico Helicopter Safety Advisory Committee (HSAC), Association of Air Medical Services Safety Committee (AAMS), Air Medical Safety Advisory Committee (AMSAC), the National Transportation Safety Board's Safety Symposium, International Society of Air Safety Investigators (ISASI), and the American Eurocopter Pilot Safety Seminar. We made presentations on helicopter accident analysis, safety management, and EMS Task Force actions. Our outreach efforts to industry associations and safety organizations, including the night vision goggle (NVG) and EMS communities, build trust and support our partners in improving helicopter safety. Our efforts contributed to the 38% reduction in fatal rotorcraft accidents.

***Airworthiness Directives*:** AIR issued two emergency ADs in FY 2005 to close a spar cracking issue for Cessna 401, 402, 411, and 414A airplanes. Also, using risk assessment and in-service data to quantify the safety impact, AIR grounded the Raytheon Beech T-34 fleet after a third fatal accident since 1999 due to wing spar fatigue. Other general aviation ADs in FY 2005 included:

- Issued Special Airworthiness Information Bulletins (SAIB) on the Brantley Model B-2B and (restricted Category) Bell UH-1's.
- Issued an AD for North American Aviation T-6 for wing fatigue and corrosion.

***Safety Oversight/Certificate Management*:** AIR completed 8 Aircraft Certification Systems Evaluation Program (ACSEP) safety audits of general aviation production approval holders (PAHs) in FY 2005 to evaluate compliance with aviation safety regulations, achieving the FY target. We identified no noncompliances of an immediate safety concern.



***Safety Data and Systems*:** In FY 2005, the service successfully launched the developmental phase of the AIR Aviation Safety Accident Prevention (ASAP) program re-host. The system is web-based and being developed using .NET technology with an MS SQL Server database back-end. The system collects safety data from several national data sources. The data is then enhanced with trends and warnings. Discovering and identifying precursors and then initiating warnings supports proactive safety interventions. The re-hosted ASAP program will allow us to more quickly identify accident/incident precursors and take the necessary corrective actions.

***Research and Development*:** AIR, with Flight Standards Service, continued to study the effects of carbon monoxide on safety with Wichita State University in FY 2005. Industry has introduced low-cost carbon monoxide detectors approved for installation in general aviation aircraft. Our policy development on installing these safety related instruments will prove valuable in reducing

carbon monoxide related accidents. In FY 2005, AIR also continued the Aging Aircraft research program with the National Institute for Aviation Research at Wichita State University. This research is giving us valuable feedback on the effects of aging on general aviation aircraft. Research data is already being filtered and used in the American Society for Testing and Materials (ASTM) F39 consensus standard effort to develop wiring standards for general aviation products.

General Aviation Safety Management Challenges

Unmanned Aircraft Systems (UAS)

- Demand for civil operation of UAS is expanding from research and development flights in support of security and military operators to more conventional commercial uses in agriculture, resource and land management, utility/pipeline surveillance and aerial photography.

Light Sport Aircraft

- All light sport aircraft must be certified in the Experimental Light Sport category by January 31, 2008. After that date they will not be eligible for certification and cannot be operated. Light sport designation offers an entirely new class of affordable aircraft to the flying public. The light sport designation requires less complex rules and regulations than are applicable to "full-scale" general aviation aircraft. This will require oversight of new designees.

Microjets

- The aviation industry is positioning itself to accommodate a growing trend in air travel for corporate executives and people who prefer custom point-to-point air service over the traditional hub and spoke system. Small, high-performance jet aircraft, known collectively as "microjets" or very light jets are presently being developed by U.S. companies (Eclipse Aviation, Cessna Mustang, Adam). We will be expected to work with microjet manufacturers on their new designs and develop safety standards commensurate with the new operating concept of small, high-performance aircraft that transport only a handful of passengers. We expect continued growth in the number of new aircraft designs and associated technological advances.

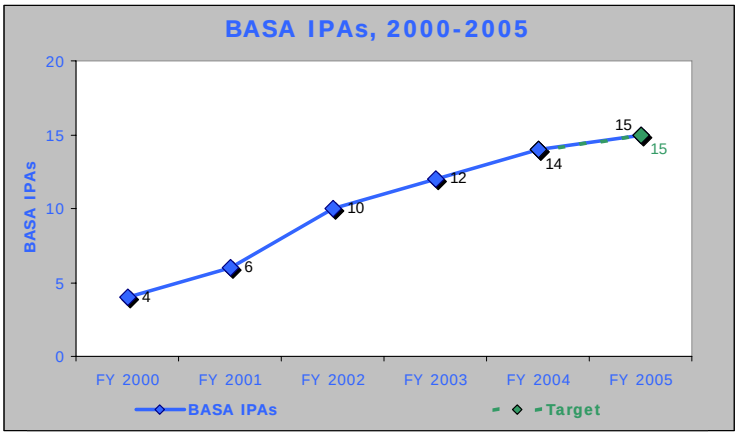
Aging General Aviation Airplanes

- The GA fleet is a varied and extensive fleet of airplanes that continue to age and demonstrate more and more susceptibility to structural fatigue and system failures. These failures are causing more fatal accidents at a time when we are directing resources to sharply reduce the number of GA fatal accidents.

INTERNATIONAL LEADERSHIP

AIR's International Leadership supports AVS and API international aviation safety objectives and FAA international goals. The AIR international program develops policy guidance on international airworthiness issues, negotiates airworthiness agreements and arrangements; maintains bilateral relationships through contact with Civil Aviation Authorities (CAAs), and provides support through technical expertise. AIR works in with international civil aviation authorities, including the International Civil Aviation Organization (ICAO) and European Aviation Safety Agency (EASA), to advance new technologies, address obstacles to transferring of aeronautical products, and promote processes and practices that could enhance global safety. In FY 2005, we devoted about 3% of AIR's budget resources to initiatives advancing International Leadership.

2005 Program Highlights



***Bilateral Agreements*:** AIR works to develop Bilateral Aviation Safety Agreements Implementation Procedures for Airworthiness (BASA IPA) with other CAAs, based on our technical assessment of their certification systems. During FY 2005, we conducted four airworthiness negotiation sessions with the European Community, aimed at concluding a new agreement with the EU. The negotiations yielded a draft Airworthiness Annex, setting the stage for completion of a new agreement. Also in FY 2005, AIR and the Civil Aviation Safety Authority of Australia completed a BASA IPA to cover U.S. small airplane STCs and repair data acceptance for transport airplanes, achieving our target. FAA has entered into BASA IPAs with counterpart aviation authorities in: Australia, Brazil, Canada, France, Germany, Israel, Italy, Malaysia, Netherlands, New Zealand, Romania, Russia, Singapore, Sweden, and the United Kingdom. A similar agreement is in place with Taiwan. In addition, AIR:

- Evaluated the CAA of New Zealand's system for repair data approval for FAA acceptance.
- Assessed three national certification systems in Europe.
- Completed Stage 1 assessment of the European Union (EU) regulatory system.

***International Safety Standards*:** FY 2005 is highlighted by three noteworthy safety standards accomplishments: (1) we issued Order 8110.52 revising our policy on validation programs, (2) we updated Order 8100.14A regarding activities with the European Community, and (3) we completing the draft ICAO Airworthiness Manual. The ICAO manual covers topics from best practices on how to organize and operate a CAA to international safety oversight of leased aircraft, and is designed for use by CAAs and operators around the world. Additionally in FY 2005, AIR:

- Reconciled RNAV and RNP terminology.
- Adopted performance-based navigation strategy in line with FAA Roadmap.
- Harmonized US and European RNAV standards.
- Processed amendments on conventional navigation systems.
- Published Order 8110.52, Type Validation and Post-Type Validation Procedures.
- Published Order 8110.53, Reciprocal Acceptance of Repair Design Data Approvals Between the FAA and Transport Canada.

***Global Safety Initiatives*:** During FY 2005, AIR provided assistance to five international aviation safety teams with development of action plans for regional safety teams based on current and future revisions of CAST Safety Plans to reduce the worldwide commercial accident rate. Implementation of the CAST safety plan in the North America has a potential result of a 73% fatality risk reduction from commercial aviation accidents by 2007. Continued implementation of the CAST safety plan during FY 2005 has a potential 62% reduction in Europe, a 60% reduction in Asia, and a significant reduction in Pan-America and Africa. Also, in our Global Manufacturing Initiative, which aims to move the aviation manufacturing community toward an environment where parts can seamlessly move globally, we collaborated with our bilateral partners to develop: (1) a "Definitions of Terms" with common definitions for use between authorities, (2) a "Common Supplier Surveillance Standard" identifying minimum authority requirements to an approved production organization (PAH/POA) to demonstrate satisfactory supplier control, and (3) "Common Authority Surveillance Processes" addressing minimum requirements for surveillance activities. Also in FY 2005, AIR:

- Published Standards and Recommended Practices (SARPs) for Global Positioning System Reference Augmentation System (GRAS).
- Hosted the 6th Annual Production and Airworthiness Meeting where manufacturing oversight authorities from various countries discuss global issues and concerns as well as how we conduct our regulatory responsibilities.

***Technical Assistance and Training*:** During FY 2005, AIR provided training on part 25, Subparts C, D, E, and F to the General Administration of Civil Aviation of China (CAAC) to increase their technical competency to support certification of China's first transport category regional jet, the ARJ-21. AIR conducted TSO appliance approval workshops to Direccion General de Aeronautica Civil (DGAC) Mexico and the Korean Civil Aviation Safety Authority to help them prepare for future appliance approvals. AIR also conducted three courses on aircraft modifications and repairs to the Latin American Civil Aviation Commission (LACAC) Regional Safety Oversight Cooperation System, and conducted 16G (seat crash dynamics) training and laboratory evaluation for the Civil Aviation Safety Authority of Australia.

International Leadership Management Challenges

Resource Limitation

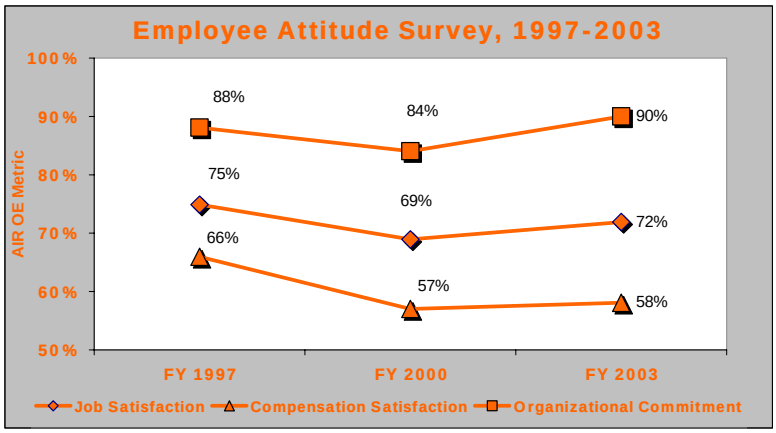
- The budgetary constraints affecting all FAA activities limited AIR's ability to provide technical assistance and start work on new bilateral agreements. AIR could not support requests from Hong Kong, Switzerland, Russia, and others during the fiscal year.

ORGANIZATIONAL EXCELLENCE

At the core of our organizational excellence are strategies for developing, acquiring, and sustaining the people, information, and financial resources essential for performing our safety and international missions. The President's Management Agenda guides our efforts to put the right capability in the right place, at the right time, and at the right cost. AIR's organizational excellence extends to our initiatives in Strategic Management of Human Capital, E-Government, Financial and Procurement Performance, Budget and Performance Integration, AVS Integration, and Citizen-Centered Customer Service. Our organizational accomplishments in FY 2005 contribute to increased operational effectiveness of our safety and international programs. We estimate that we allocated 8% of our budget in FY 2005 to these performance-accelerating strategies.

2005 Program Highlights

***Strategic Management of Human Capital*:** Strategic management of human capital provides our framework for managing our people to optimize mission performance and results. As a component of the President's Management Agenda and overall organizational excellence, we've increased emphasis on human capital management. In the way of employee and leadership development we design, develop, and manage our technical training program. At the same time, we ensure appropriate delivery methods for the workforce so they have sufficient knowledge and skills to fulfill their responsibilities. According to the 2005 GAO report, most airline representatives were at least moderately satisfied that FAA inspectors have enough technical knowledge and training to fulfill their responsibilities. Technical training is essential to maintaining operational effectiveness and achieving our organizational goals. People are important to the success of this organization and are central to our ability to perform our operational safety mission. As an indicator of our progress in managing people, we track employee response in the tri-annual Employee Attitude Survey (EAS) as a gauge of overall workforce satisfaction. AIR responses to the EAS improved in all categories in the FY 2003 (the most available data) survey over FY 2000. Additionally, after an effective communication strategy developed by the service, AIR achieved the agency's highest response rate to the EAS mini-survey conducted in 2005.



In FY 2005, AIR also used about 4,600 designees to complement our federal oversight and extend the service's certification and safety reach. Other AIR human capital accomplishments in FY 2005 include:

- Implemented the AIR Employee Attitude Survey (EAS) action plan.
- Completed a training needs assessment that identified the key business management skills for the AIR non-supervisory technical workforce.
- Evaluated the Structured AIR Supervisory Selection (STAIRs) program, the supervisory selection program for AIR's first line supervisory positions.
- Identified five Leadership Enhancement and Development (LEAD) program opportunities, one each at HQ and the field Directorates. The LEAD program focuses on enhancing

leadership skills of high-potential employees by placing them into appropriate developmental assignments.
- Developed and delivered 5 NATCA collective bargaining agreement (CBA) training sessions for AIR managers and other key personnel.
- Used a geographic workload program to determine staffing assignments and geographic boundary decisions, making more effective use of personnel and budget resources in the continued operational safety oversight of production approval holders.
- Supported AVS Supervisory Leadership Team establishment of the "First-Line Network" (FLN).

***E-Government*:** We look to E-Government to help increase employee and public access to programs and information, thus improving operational effectiveness. During FY 2005, FAA issued Order 1370.93 on Web Management, requiring us to certify that our web content is accurate, current, and meets FAA web standards and requirements. This year, AIR reviewed and updated more than 4,000 web pages, editing and restructuring them following plain language and web usability principles. We migrated content to FAA-provided templates, and ultimately certified AIR compliance with the new order.

In FY 2005, AIR designed the Safety Management Program business architecture. This represents a significant milestone in our support of the President's Management Agenda E-Government initiative, and our compliance with the Clinger-Cohen Act which requires the federal government to use performance-based management principles for acquiring information technology. The business architecture will be complemented by the design of the data/information and services architectures, based on the Federal Enterprise Architecture Framework (FEAF) and corresponding reference models. These activities are aimed at aligning information technology (IT) to the business, while designing for long-term agility, from the business and technical perspectives. Other AIR E-Government advances in FY 2005 include:

- Provided Electronic Learning Management System (eLMS) training to all aircraft certification training coordinators.
- Advanced the implementation of Electronic Filing Service, as a cornerstone of ASKME.

***Financial and Procurement Performance*:** Optimizing financial and resource management maximizes resource effectiveness. Central to this effort is improving our cost accounting capabilities. In FY 2005, AIR reviewed preliminary FY 2005 Labor Distribution Reporting (LDR) data compared to FY 2004 staffing standards information. The comparison, based on original LDR requirements, shows that AIR is tracking work in the proper LDR projects and activities. However, the review also indicates that we need to make some adjustments to existing LDR project codes and activities to provide better management information on the costs and specific services we deliver. Other AIR FY 2005 financial accomplishments include:

- Improved the way of reconciling expenditures of Office of Personnel Management (OPM) Interagency Agreement funds.
- Improved labor distribution compliance by 5%.

***Budget and Performance Integration*:** We are strengthening the link between budget and performance to support evaluation of program effectiveness and results-oriented decision-making. We look to advance our capabilities to meet budget and performance integration criteria developed by the President's Management Council:

- Periodic management reviews of integrated financial and performance information, and demonstrated improvement in program performance and efficiency in achieving results.
- Outcome-oriented budget and performance documents.
- Improved linkage between performance and accountability, including executive and employee performance appraisal and awards.

- o Identification of full cost of achieving performance goals in budget and performance documents.
- o Development of efficiency measures for performance goals.

In FY 2005, AIR aligned service strategies and activities to agency goals, attributing 100% of budget resources to strategic outcomes. We created new operational metrics and targets to track and guide our surveillance program performance, and strengthened our full-cost estimation for priority projects. To maintain accountability and stay on target, management conducted monthly reviews to track performance toward established targets and milestones. And, to stay within budgetary constraints, AIR used safety indicators and performance information to prioritize and sequence our workload to meet demands with reduced staffing. AIR also evaluated our FY 2004 performance report, developing recommendations for improving the report's usefulness for program management, decision-making, and customers.

***AVS Integration*:** To support AVS integration, we capitalize on efficiencies by integrating our processes and operations, especially with the Flight Standards Service. At the core of our integration initiatives is implementation of ISO 9000 and broader quality management. In FY 2005, AIR completed all ISO 9000 pre-registration activities including an operational AIR Quality Management System (QMS) website, AIR QMS system training, auditor training, and internal audits. AIR developed a web-based tool for use by employees to request corrective actions for QMS processes. Once a corrective action request is made, the system helps management representatives prevent and eliminate the causes of nonconformity with processes, products, and the QMS. Also in FY 2005, AIR supported the development and delivery of the training Understanding AVS: Journey to Excellence to all AVS managers and supervisors.

AIR Quality Policy

We will deliver quality products and services that promote aviation safety, and we will continually monitor and improve our processes to meet customer needs.

***Citizen Centered Customer Service*:** AIR used the Customer Service Initiative (CSI) to improve issue resolution. During FY 2005, other customer service accomplishments include:

- o Transport Airplane Directorate established a method to collect, evaluate, and respond to customer service surveys. This enables each office to implement a corrective action plan to resolve customer issues and improve customer service.

Williams International

Cited partnership with the Chicago Aircraft Certification Office as "the model for major improvements in the speed and quality of the certification process while significantly improving product safety."

Organizational Excellence Management Challenges

Resource Limitation

- Budget constraints continue to force staff reductions, which resulted in some work being delayed or not accomplished at all. Inability to replace staff has resulted in a loss of some technical expertise in specific skills and additional work being assigned to the remaining employees. The overall impact is a decline in work quality and timeliness. We had to prioritize our certification work and received negative feedback from customers whose schedules were delayed due to our prioritizations.

Staffing of Key Positions

- Continued use of long-term or multiple temporary managers in key positions has caused loss of continuity and management direction in several important programs. Key decisions were delayed when time was required to bring the temporary managers up to speed, resulting in some work not being completed. The effect is compounded when managers are called upon to act in multiple positions, or when one substitution triggers a cascade of temporaries.

Performance

FEDERAL AVIATION ADMINISTRATION
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